

VOL. 81

NO. 1

JAN 27 1955

Despite inclination of the White House to follow bad advice, it's not too late for "the people" — in our case mill employees — to express themselves to their Congressmen, see that something is done about the tariff situation. (See editorial, Page 63).

textile bulletin

JANUARY • 1955

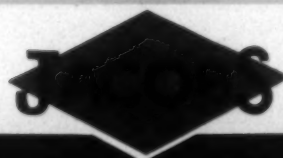
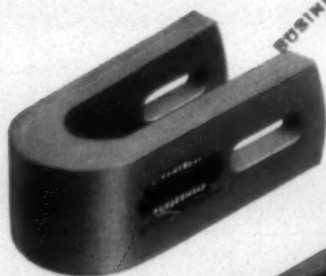
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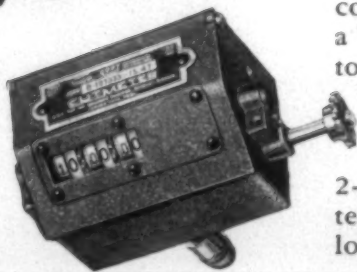
JACOBS

In Spinning...

New Veeder-Root 2-3-4 Convertible Hank Counters are easier to read, reset and maintain. And they are built to give you years of accurate facts-in-figures that help toward closer production Control.



Weaving...



Here's the combination to count on... *on every loom*... a Veeder-Root Cut Meter (left) to light a light or stop the loom at a pre-set woven yardage, *assuring uniform cuts of cloth*... and a new Veeder-Root 2-3-4 Convertible Pick Counter to keep accurate count of loom production on each shift.



Knitting...

For any type of knitting machine, Veeder-Root makes the counters you need to control your production. These new Revolution Counters, with the same advantages as the new 2-3-4 Convertible Hank and Pick Counters, can also be geared to record racks, or racks and tenths. In Fact, In Any Department of Any Type of Textile Mill...



VEEDER-ROOT
IS "THE NAME THAT COUNTS"

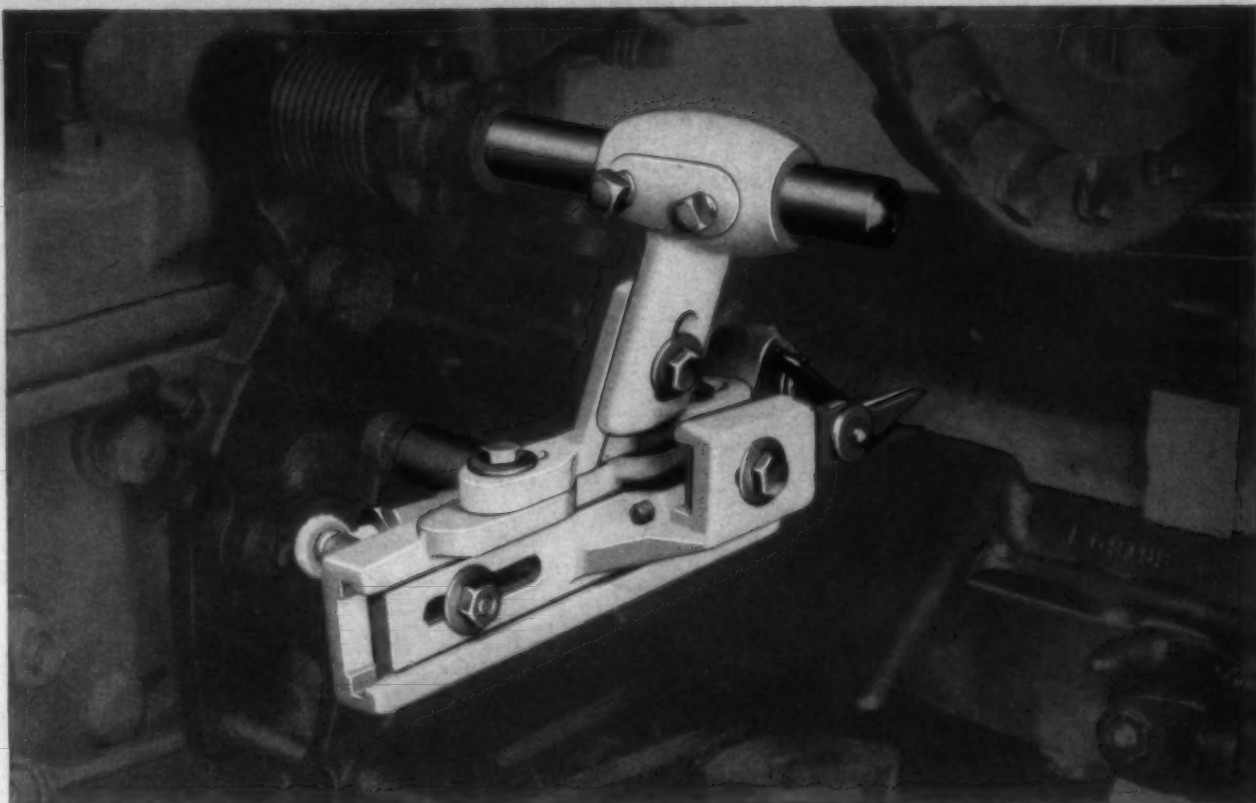


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NEW #25 DRAPER THREAD CUTTER* FOR X-SERIES AND E MODEL LOOMS

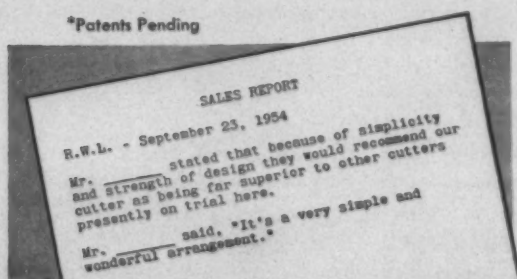
**features simplified construction
with full range of adjustments**

Here are the reasons why the New #25 Draper Thread Cutter is the best cutter for your looms.

- Maintenance costs are reduced with 20 fewer parts used in assembly.
- It is easily applied without changing existing parts on the loom.
- Settings are easier to make — easier to maintain.
- The danger of drag-ins is greatly reduced.

Mill Trials prove that this simplified Thread Cutter, with its full range of adjustments, increases production and lowers costs.

*Patents Pending



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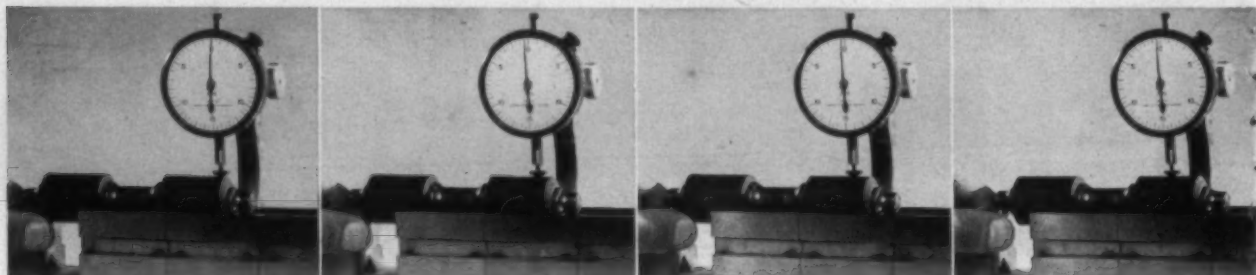


Filling Knife Assembly cuts and holds better on yarns ranging from 15 denier monofilament nylon to 4's cotton flannel napping.

C677
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1955

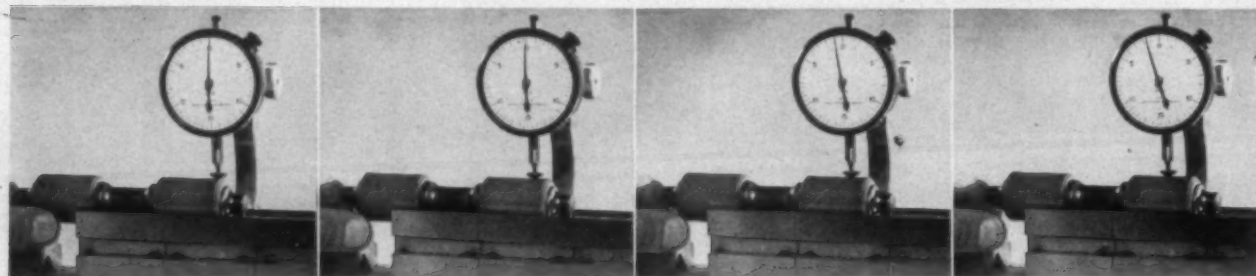
DAYCO COTS Stay True.

DAYCO EW-465 COTS



Start at left and compare each photo frame above with the one directly below. Note the remarkable lack of wear on the Dayco IBC Cot as against that of Brand "B" Cot as each is moved from left to right across the Dayco Roller Gauge.

Brand "B" COTS



Actual unretouched photographs of 9-month competitive test. Indicator shows wear in 1/1000 of an inch increments.

Here is proof of the superiority of Dayco Cots! These *un-retouched* photographs—taken after 9-month competitive test—prove Dayco EW-465 Cots with IBC, non-eyebrowing ingredient, last longer, do not groove.

Dayco Cots (top) were tested side by side on the same frame with competitive cots, using the same yarn, under identical conditions. After 9 months of testing, Dayco EW-465 Cots stayed truer, never exceeding 1/1000" in wear as proved by the Dayco Roller Gauge Test. The gauge proved competitive cots (Brand "B") began to groove, needed re-buffing more quickly.

Brand "B" cots exceeded the serviceable standard at the end of the 9-month test while Dayco Cots had many service hours yet remaining.

Dayco EW-465 Cots consistently outperform other cots because rigid control of the synthetic rubber compounds insure uniformly correct surface texture, cushion and friction. Only Dayco EW-465 Cots contain the amazing new ingredient, IBC, to combat and control eyebrowing. The chemical and mechanical action of IBC sets up the right coefficient of friction to eliminate the eyebrowing problem.

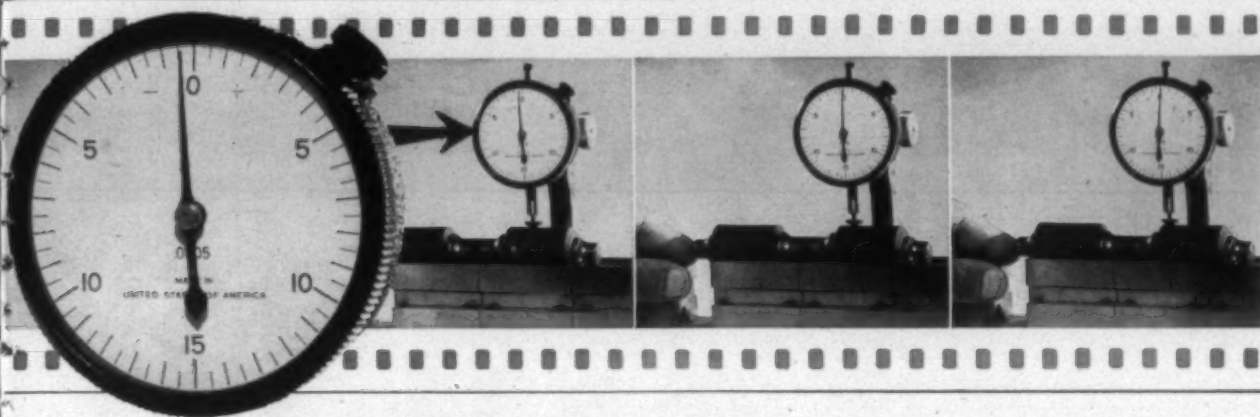
Because of Dayco Cots' extremely durable surface, perfect cushion, and exactly right coefficient of friction, they retain their superior physical properties throughout their long service life. In fact, Daycos' drafting ability *improves* with use!

You benefit the instant you equip your frames with Dayco Cots. You can

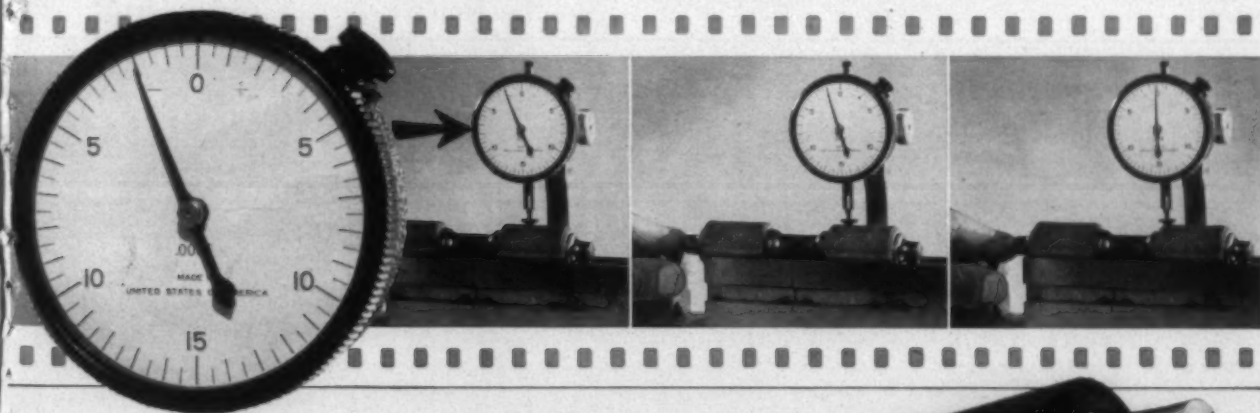
expect, and get, improved yarn quality, valuable savings in time, materials and labor and increased production at the lowest possible replacement cost. Try Dayco EW-465 Cots on your frames for personal proof of their performance. See your Dayco Representative for complete details.

*Compare these
Dayco features
against any
other cot...*

Do Not Groove by Actual Test!

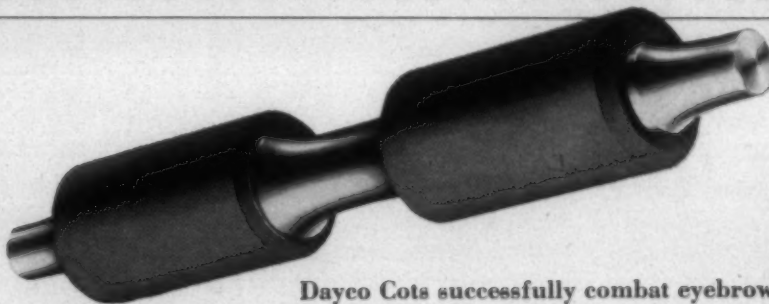


Magnified Photo of Roller Gauge
Measurement in exact center of cot.)



DAYCO COTS

- Successfully combat eyebrowing
- Create fewer lap ups and ends down
- Require fewer buffings
- Don't groove, pit or develop flat spots
- Unaffected by moisture or temperature changes
- Need fewer clearer board cleanings
- Draft better quality yarn
- Lower overall cot costs



Dayco Cots successfully combat eyebrowing

Actual mill tests prove New Dayco Cots with IBC ingredient successfully combat eyebrowing, draft better yarn and run longer between buffings on all types of frames.

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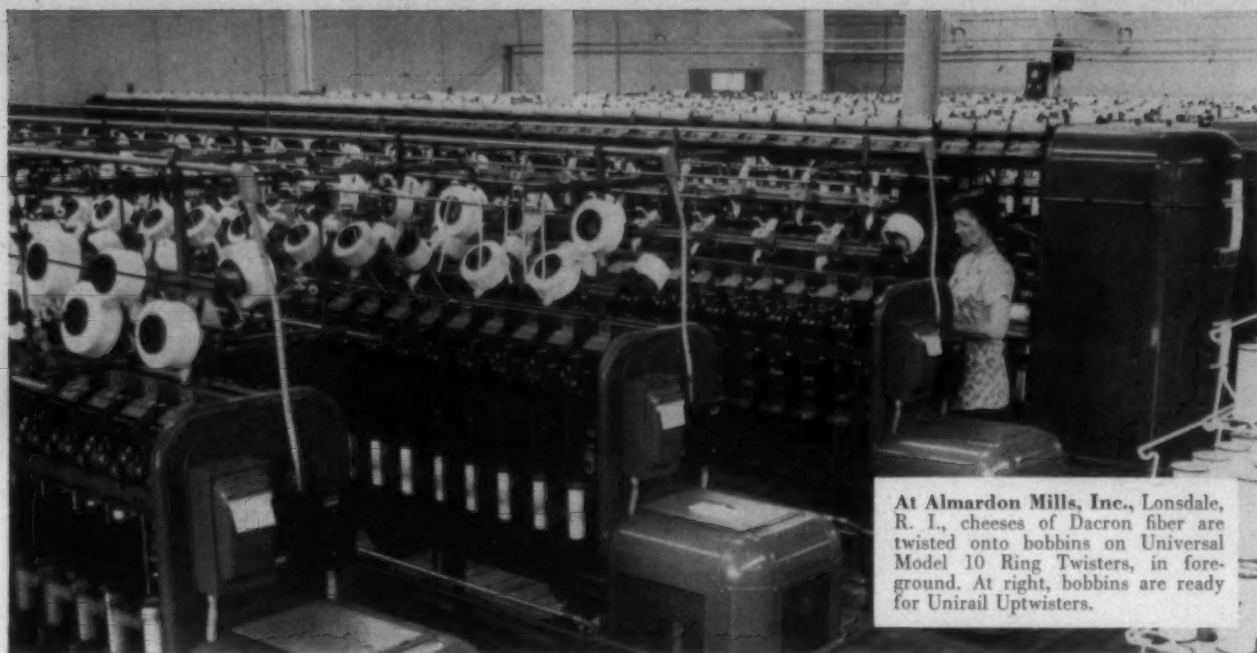
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At Almardon Mills, Inc., Lonsdale, R. I., cheeses of Dacron fiber are twisted onto bobbins on Universal Model 10 Ring Twisters, in foreground. At right, bobbins are ready for Unirail Uptwisters.

Almardon Mills Solves the Dacron-Twisting Problem

*Increases production of top-quality yarn to a new high —
cuts costs to a new low — with Universal equipment.*

Supplied with zero twist, and requiring a high final twist, Dacron has introduced new throwing problems to mills processing this new fiber.

Almardon Mills was no exception. Using its previous equipment, this well known producer of fine quality Dacron piques and lenos was redrawing 70 denier Dacron from cheeses to bobbins, then throwing 20 turns of twist on 12 ounce package uptwisters. Uptwisting speed was slow, the filaments opened, and breakage was high. Flyers were necessary, and due to the abrasive action of Dacron, had to be replaced at every doff. And, if relaxed yarn was required, the added cost of rewinding was necessary.

**Here, in the words of Chester H. Boyce,
Almardon Vice President,
is how this mill solved the Dacron problem:**

"We worked out a process with Universal, combining their Model 10 Ring Twisters with their new Unirail® Headless Package Uptwisters. This changed the picture

completely. With the Model 10 creels we can insert two turns of twist direct from the cheeses without redrawing. High speed uptwisting is then possible without separation of the filaments. And the Model 10 bobbins are the ideal supply for Unirail Uptwisters.

"Our Unirail Uptwisters put in remaining 18 turns at 14,000 r.p.m. without flyers. And right there we've cut down labor costs and boosted production. No more flyer replacements, and breakage is practically nil.

"Now, with our Universal combination, we're producing big pound-and-a-half Dacron packages — headless packages with *controlled relaxation of the yarn* without rewinding. In our experience, this is the best package you can get for delivery to warping and quilling."

If you are one of the many mills now working with Dacron, why not investigate how this Universal system can improve your own production picture? For helpful information on this — or on any other twisting or winding application, see your Universal representative.



UNIVERSAL WINDING COMPANY

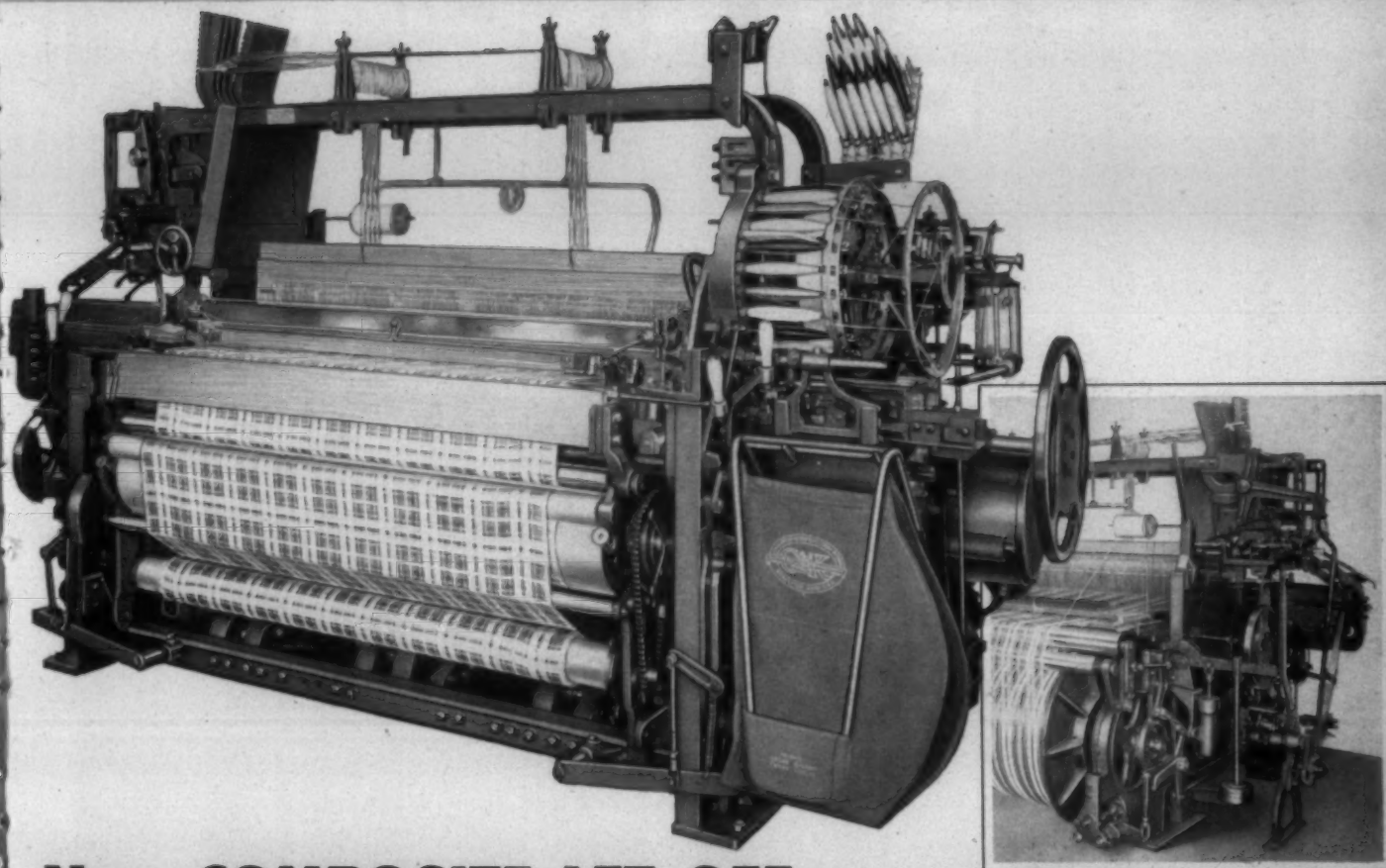
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*Agents in every principal textile center throughout the world
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No. 3 in a series explaining

Why C&K's New **M**ulti-**P**urpose Looms mean **M**ore **P**rofit to any mill



New **COMPOSITE LET-OFF**

You saw it at Atlantic City on Spun Rayon Suitings, Upholstery, Filament Dress Goods and Cotton Denims . . . and it is fully as effective on Woolen or Worsted Fabrics, Lenos, Handkerchiefs and many other constructions.

THESE NEW **M-P** FEATURES CONTRIBUTE → TO THESE PROFIT FACTORS

	Better Quality	Increased Work Assignments	Increased Production (Speed & Efficiency)	Lower Maintenance	Versatility
Rotary Magazine: For single color, or for multiple-color work (up to 4).	✓	✓	✓	✓	✓
Scissors Thread Cutter	✓	✓	✓	✓	✓
Vacuum Filling Control	✓	✓	✓	✓	✓
Cone Picking		✓	✓	✓	✓
More Rugged Basic Frame: Common to all M-P Looms.		✓	✓	✓	✓
Letoffs: New composite type. Also other standard and special types.	✓	✓		✓	✓
Takeups: All purpose, silk, or lower winding roll.	✓	✓		✓	✓
Lay: Precision-built and convertible — 1x1, 2x1, 4x1, 4x2, and 4x4	✓	✓	✓	✓	✓
Shedding Mechanisms: Knowles Head — 25 Harness, 4/10" Space Knowles Head — 20 Harness, 1/2" Space Dobby Undercom Jacquard	✓	✓	✓	✓	✓
Feelers: As required.	✓	✓	✓	✓	✓
Driving & Shipping	✓	✓	✓	✓	✓

PRECISION, STRENGTH, SIMPLICITY Throughout Every M-P Loom

Whatever you weave, here's *real news* for you . . . *this new composite let-off* on C&K **M-P** Looms. And here are the five operating advantages you get from this important new **M-P** feature:

1. New Composite Let-Off operates with **More Precision** on an exceptionally wide range of fabric weights and constructions.
2. It takes strain off warp ends as motion is mechanically powered to turn beam.
3. Range in picks per inch is greatly increased through improved roller clutch instead of increment-restricting ratchets.
4. **More Positive** yarn delivery.
5. Provides whip roll location to afford longer shed line . . . with less strain on yarn.

This new Composite Let-Off helps make **More Profit** from **More Perfect** cloth. And this is *only one* of the many new **M-P** features contributing to the five profit-factors which are the basic objectives of every mill. Check the chart at the left . . . and see all the ways in which new **M-P** Looms mean **More Progress** in modern weaving.

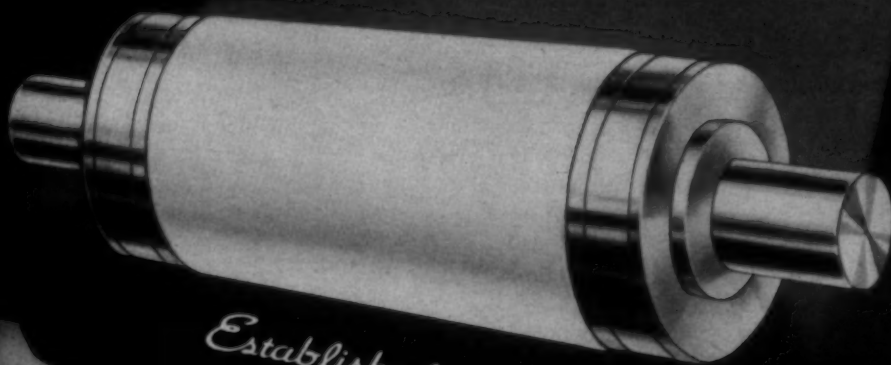
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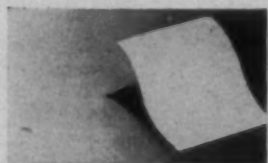


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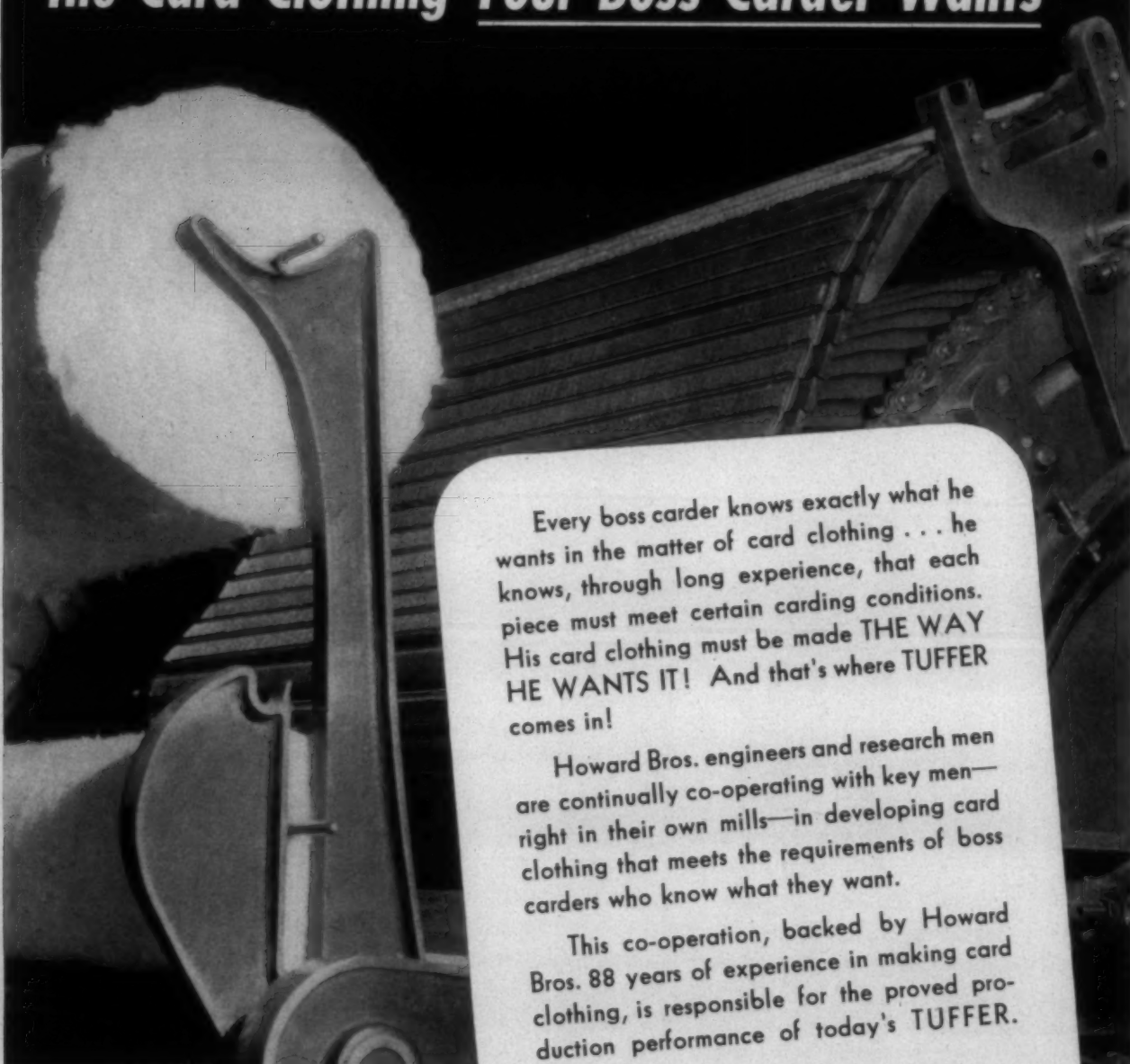
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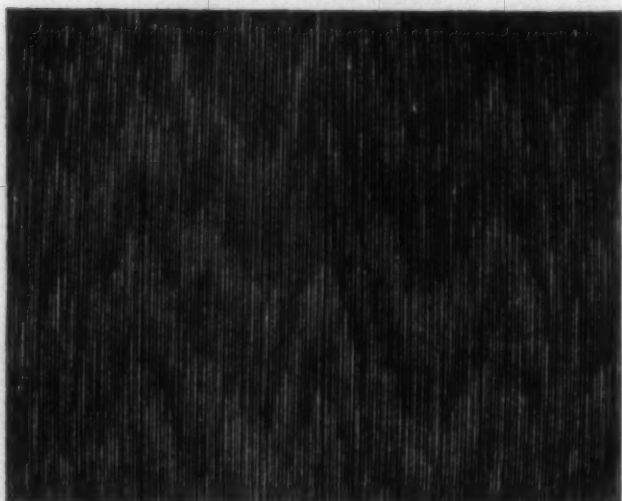
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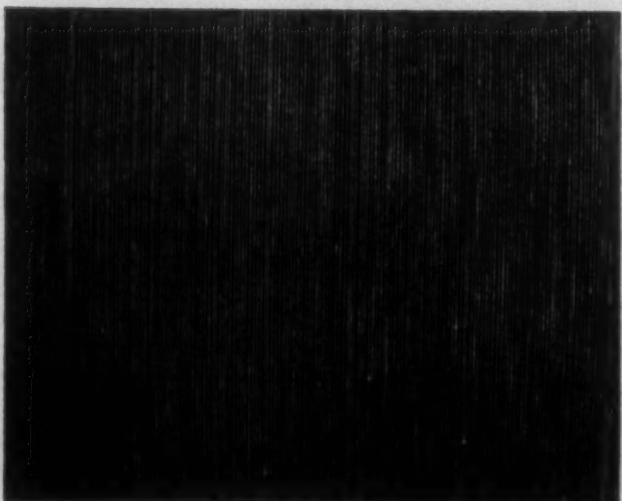
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Compare, for example, a gallon of famous Barreled Sunlight paint with a gallon of any other paint . . . not by what it costs per gallon, but by what it does *on the wall*. You'll soon find that Barreled Sunlight takes much more thinner and gives you much more paint *for* the wall. Yes, and it looks cleaner, brighter, longer after it goes *on* the wall.

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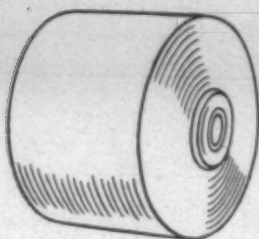




*There is a difference in the warps
— and in the way they weave*

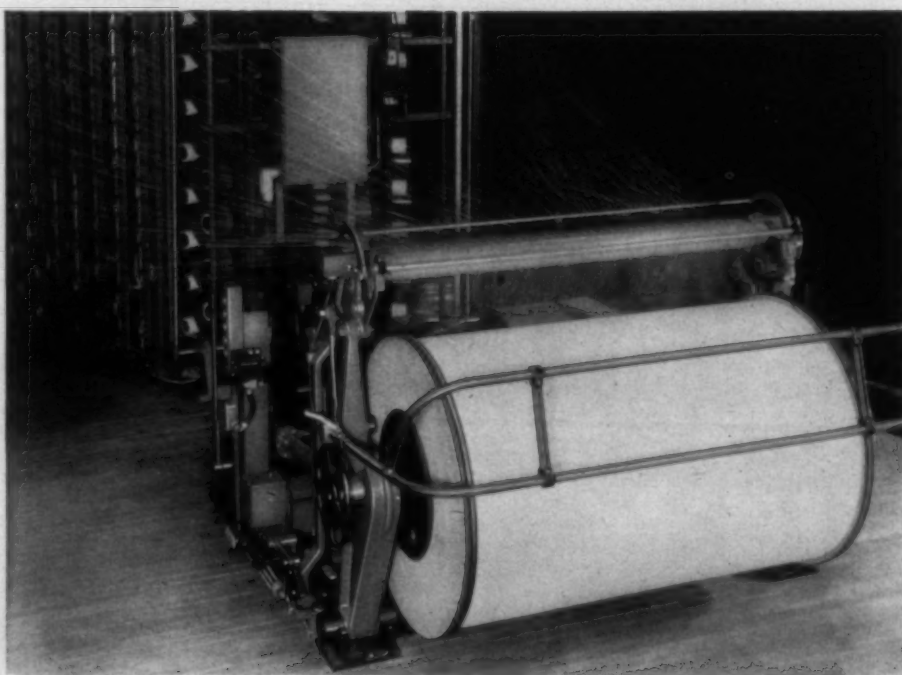
SUPER-SPEED

WARPER and CREEL FOR 40"-head BEAMS



LARGE PACKAGES HAVE ADVANTAGES IN THE STEPS THAT FOLLOW SPINNING

For example, with 24s yarn, a 12" bobbin with 3" ring will hold 15,000 yards, or *three times* as much as the standard bobbin. The new Type "D" Barber-Colman cheese holds 6½ lbs., or 120,000 yards, which is 2½ times as much as the standard Type "C" cheese. When these cheeses are wound onto slasher beams, the advantages vary with the size of the beam as follows: large cheeses provide 5 28"-head beams per cheese compared with 2 beams for standard cheeses; for 36"-head beams, the comparison is 3 to 1; and for 40"-head, also 3 to 1. In the slashing, assuming 1200 yards per loom beam, 28"-head beams provide 20 loom beams per set, 36"-head beams provide 33, and 40"-head beams 39. This reduces slasher creelings per 120-hour week to 5.68, 3.67, and 3.16 respectively. *The increase in loom beams per set, and the reduction in creelings per week, can provide substantial cost reductions in many mills.* If the large cheeses are used for twisting, similar advantages are gained, resulting in the winding of 2½ times as many twister bobbins per creeling.



The development of the large bobbin has led to the development of larger spooler packages which, in turn, has called for the development of a matching warper and creel. The new Barber-Colman Type "DW" Warper shown above will wind slasher beams as large as 40" head. It has all the features of the familiar Type "VW", plus several new ones such as a pivoted comb support which moves the comb forward as the beam fills. The driving

drum, clutch, brake, and motor — all of which are larger and more rugged to handle the heavier loads — are now arranged back of, rather than beneath, the beam. The creel shown is not the new Type "DC" Creel but is the standard Type "VC", as the new Warper can be used with either the large or the standard package. For further details, please write for descriptive literature, or ask your Barber-Colman representative.

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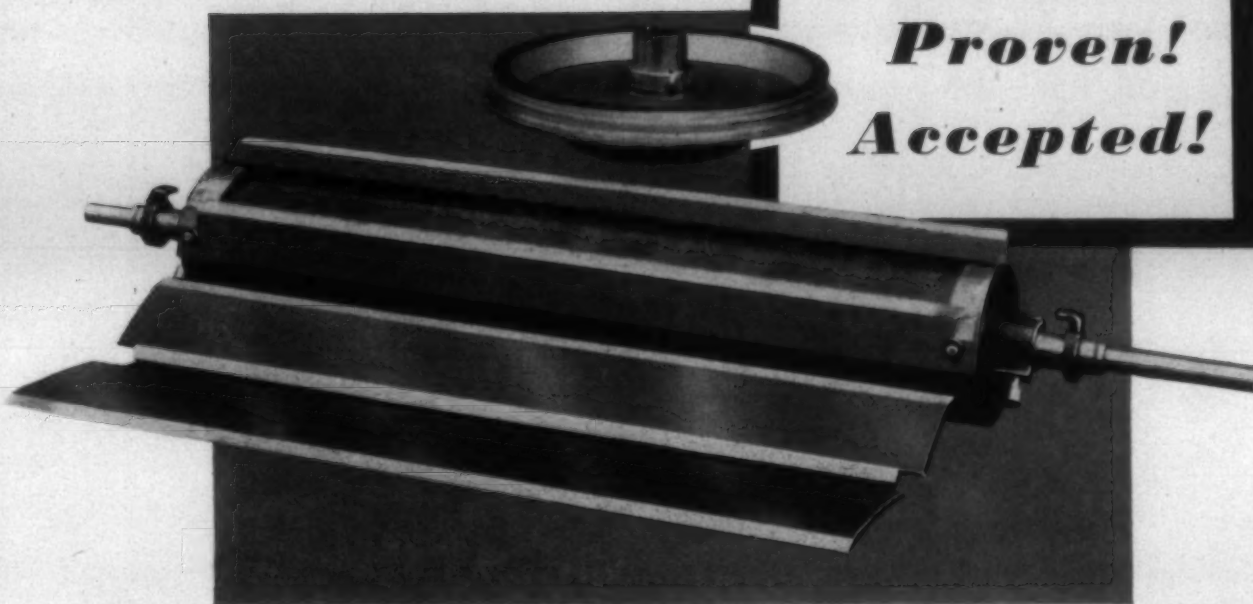
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It is precision built machined to your specifications and tolerances by GOSSETT technicians. The extra long spring steel wire fillets are guaranteed to fluff all synthetic fibers from the card cylinder thus enabling the doffer to pick them off evenly. Further, the GOSSETT Card Fancy fluffs the synthetic fibers so well that the doffer will pull off and make as good a sliver as you have ever seen.

When you install the improved GOSSETT Card Fancy there will be no more excess loading on the cylinder. Write at once for full particulars and estimated cost.



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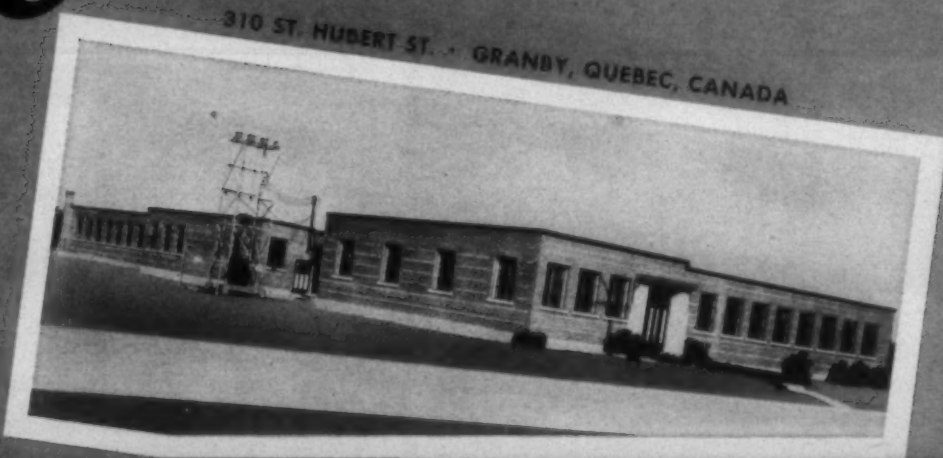
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SACO-LOWELL

Duo-Roth-

A DRAFTING SYSTEM COMBINING ALL THE QUALITY BUILDING AND COST SAVING ADVANTAGES OF THE SINGLE AND DOUBLE BELT SYSTEMS.

1. The long, thin, flexible bottom apron passes the nose of the apron bar with a small radius of curvature in a manner which allows a close setting between the nip of the aprons and nip of the front roll, a condition necessary for the most efficient fiber control in the final drafting zone.

2. Without exception, mills using the Duo-Roth System have increased their drafts as much as 50 to 100 per cent, and at the same time have produced a yarn of greater strength and evenness.

3. The greater strength and evenness is vividly shown in a Duo-Roth installation producing 21's yarn from .75 hank single roving, employing a 4.52 twist multiple—the break factor secured is 2339. Previously, the same frames running regular drafting were producing 21's yarn from 1.50 hank single. With same twist multiple highest break factor obtainable was 2104.

4. Duo-Roth is cleaner; there is a reduction in clearer waste as the shorter fibres are efficiently controlled. After raising the draft from 19 on Roth to 33 on the Duo-Roth, one mill was able to extend the top roll cleaning period from 24 hours to 48 hours, on a three-shift basis. Another mill, with a 50 per cent increase in draft after changing to Duo-Roth, also extended the top roll cleaning period from 24 hours to 48 hours.

5. Duo-Roth was engineered to be a simple, quickly applied change-over to existing Roth installations. Mills having Roth frames in good condition will find that Duo-Roth will pay for itself in savings resulting from increased draft, reduced cleaning, improved operating conditions and smoother, stronger yarns.

6. Duo-Roth is the only double-apron drafting system which does not develop wear of the cage against the apron driving roll. The standard, Duo-Roth middle top roll, driving the apron, is built with a stationary arbor. The cage rests against the stationary arbor, eliminating the possibility of cage wear — a common problem with other systems.

7. The knurled and polished surface of the Saco-Lowell Duo-Roth middle top roll creates a positive and uniform drive for the aprons. Since both of the driving bosses are tied together, there is no variation in the speed of the top roll aprons regardless of the bulk of the strand being drafted. There is no slip or hesitation to create unfavorable conditions in the principal drafting zone.

8. The Duo-Roth, with the adjustable cage is extremely flexible. The correct pressure to establish the necessary degree of fibre control for the most efficient drafting can be quickly attained through easy adjustments.

A BROCHURE FULLY DESCRIBING SACO-LOWELL DUO-ROTH IS AVAILABLE ON REQUEST. SACO-LOWELL ENGINEERS WILL ALSO BE GLAD TO ARRANGE A DEMONSTRATION.



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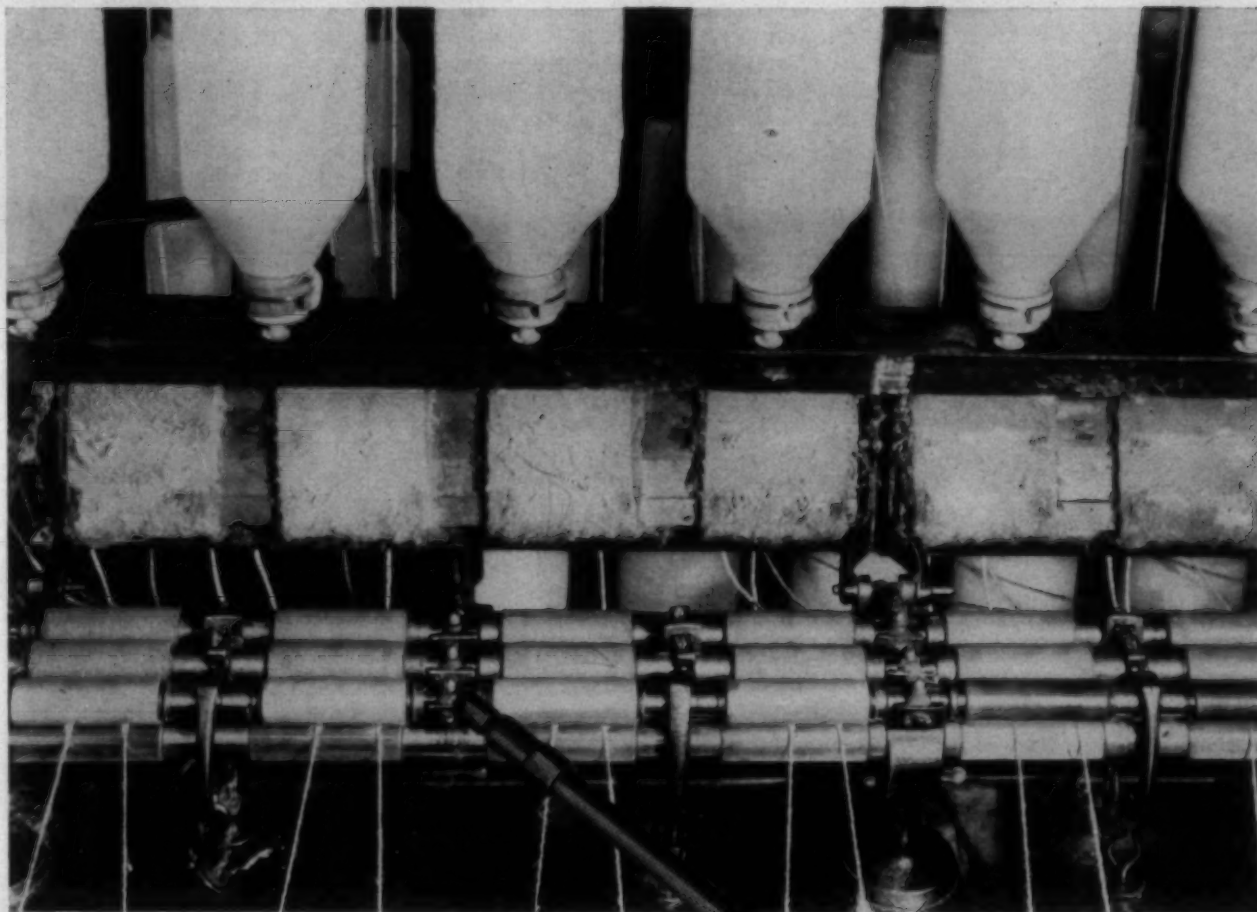
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Switch now to Sinclair NO-DRIP and protect your yarn and roll coverings from spoilage. This fine lubricant *stays in place*, without creep or drip—permitting rolls to turn smoothly without drag, providing even draft . . . and *saving wear*.

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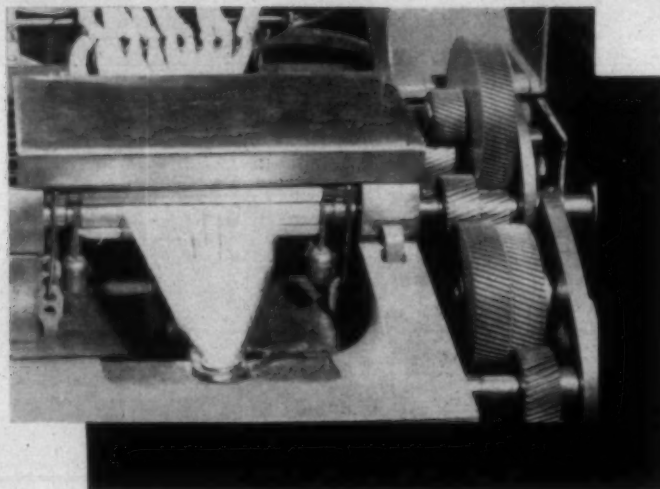
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Most of the earlier users of Ideal Drawing started out by installing it on only a few frames . . . because the claims made for it seemed too good to be true. Today many of these mills are 100% users of Ideal Drawing and others are converting to it as fast as their conventional rolls wear out.

Records kept by these mills prove that Ideal Drawing produces more and better drawing sliver per frame than any other type of drawing. Overall averages as reported show 40% more production per frame, 33% less variation in drawing sliver, 8.7% greater breaking strength, and a 58% reduction in maintenance costs. These reports also show valuable savings on floor space, on power, and in reduced waste.

What's more, it costs you less to convert to Ideal Drawing than it would cost to replace worn out units with out-moded conventional drawing. It will pay you to write, wire, or call for full information.

*Patent Nos. 2,610,363;
2,490,544; 2,412,357.
Other patents pending.

Ideal Industries, Inc.
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CARDING IS THE FOUNDATION FOR QUALITY

NO. 13

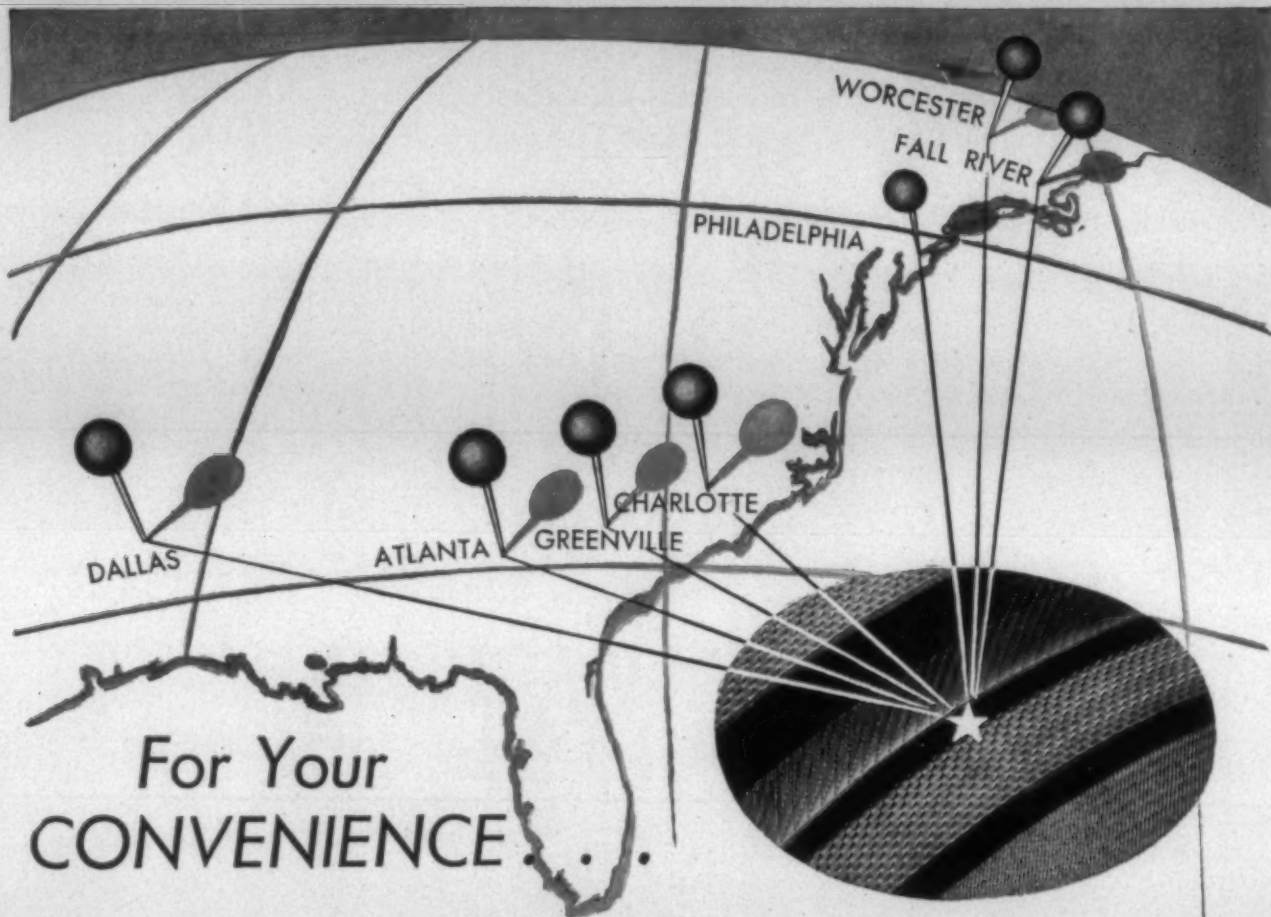
TIPS ON CARD STRIPPING

Why the Stripper Hands in Your Mill Should be Schooled in the Importance of Their Jobs:

1. Most mills accept stripping as a necessary evil, and assign this job to untrained workers.
2. Take time out to teach more than the simple mechanical motions of stripping, before turning them loose on their own.
3. Explain "why" each cylinder and each doffer should be stripped clean every round, and teach them never to leave a card until all impacted fibers are removed.
4. Appoint each stripper hand a committee of one to report to his supervisor on those cards that will not strip clean, and on any difficulty with equipment used.
5. Have it understood with supervisors that immediate attention is given to such reports, and the difficulty corrected as quickly as possible. Commend the stripper hand for reporting the difficulty.
6. Failure of supervision to act promptly will cause loss of interest and result in no further reports from stripper hands.
7. Some suggestions on care and maintenance of hand stripping equipment:
 - A. Stripper roll should run true, to prevent digging into clothing foundation.
 - B. Use stripper fillet with wire size recommended for your particular fillet wire counts. Many mills do not realize the extent of damage caused by using stripper fillet with heavy foundation, having wire larger in diameter than fillet wire.
 - C. All stripper fillets should be wound on in a tight spiral, under hand tension to set wire firmly in foundation.
 - D. Stripper roll should be set into cylinder and doffer so as to clean out all impacted waste. This setting should be checked after roll is recovered with new fillet. Guard against setting too deep. Be sure stripper wire does not contact fillet foundation.
 - E. The shafts and bushings of stripper roll should be checked periodically for wear and shaft alignment.
 - F. Replace fillet at first sign of wear, or damage to ends. Wire out of position, due to damage or loose wraps, will quickly ruin good card clothing.
 - G. Stripper stands should be securely bolted to the frame side and in proper alignment. i.e.—so that stripper roll shaft and cylinder and/or doffer shaft are in same horizontal plane.

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please turn the page ♦



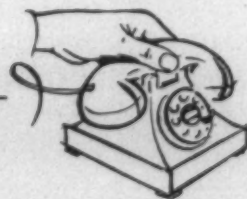
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Three factories (Greenville, Philadelphia and Fall River), six repair shops (Greenville, Charlotte, Atlanta, Dallas (Textile Supply Co.), Philadelphia and Fall River) and seven distributing points (Greenville, Charlotte, Atlanta, Dallas, Philadelphia, Worcester and Fall River) make Ashworth Card Clothing and Ashworth Service *conveniently* yours.

Nearly a century of manufacturing experience makes Ashworth Card Clothing *dependably* yours.

PRODUCTS AND SERVICES

Card Clothing for Cotton, Wool, Worsted, Silk, Rayon and Asbestos Cards and for All Types of Napping Machinery, Brusher Clothing and Card Clothing for Special Purposes. Lickerin Wire and Garnet Wire. Sole Distributors for Platt's Metallic Wire. Lickerins and Top Flats Reclothed.



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Ashworth **CARD CLOTHING**

3 NEW FEATURES!



**Stainless steel Humiducts never need painting;
Modulating humidistat gives new precision in control;
Oversize recirculated air screens drastically cut cleaning!**

Long-time newsmakers for efficiency and economy, Bahnson Humiducts now set new standards of performance, cut owning and operating costs to new lows. Three important features make this possible.

★ **New stainless steel ductwork**, at the same price as copper, is highly reflective — gives lighter, brighter rooms for peak production. Its lifetime non-corroding surface needs no painting, little maintenance . . . cuts interior and exterior cleaning time and frequency to a minimum.

★ **New modulating control** replaces on-off control. Extra-sensitive humidistats instantly respond to the slightest change in relative humidity — gradually open and close water valves to provide moisture in the exact amount required. Never too much — never too little.

★ **New oversize recirculated air screens** more than triple the effective screen area.

One mill reports cleaning cut from twice per shift to two-day interval. Can be added to existing Humiducts at nominal cost!

These really significant new features, coupled with time-proved advantages of greater flexibility, lower operating cost, and elimination of expensive apparatus houses, make Humiducts a better-than-ever choice for efficiency and economy in textile air conditioning.

I will gladly send a comparative cost analysis showing the outstanding economy of Humiducts, together with factual information proving the superior conditions maintained by this system in many mills, if you will drop me a card or letter.

Sincerely yours

Agnew H. Bahnson, Jr.
Agnew H. Bahnson, Jr.
President

Bahnson
COMPANY

WINSTON-SALEM, N. C.

AIR CONDITIONING • HUMIDIFICATION • CLEANING

TEXTILE BULLETIN • January 1955

91 OF THE TOP 100

Of the 100 top textile manufacturing firms in the nation, 91 are users of Bahnson equipment . . . a record of preference that is high testimony to Bahnson engineering skill.



Amco atomizers in the Rayflex Manufacturing Co., Inc., plant at Red Hill, Pa.

For balanced distribution of humidity

AMCO N° 6 MICRO-SPRAY ATOMIZERS

A humidifying system for textiles must meet stringent requirements. Some of these apply to the atomizers... the heart of many humidification systems:

1. Water vapor must be projected very uniformly, over a wide area. Amco No. 6 *micro-spray* atomizers accomplish this by delivering a smoke-like spray to a great distance.

2. Under conditions of varying moisture demand, the quality and distribution of the spray should not change. Amco No. 6 *micro-spray* atomizers are either completely "OFF" or fully "ON", operating only at their most efficient point and providing a constant,

even distribution pattern in every part of the mill.

3. For economy, problems of cleaning and maintenance should be minimized. Amco No. 6 *micro-spray* atomizers are self-cleaning, on every cycle of operation, and are so simple in design that servicing, when required, is easily and quickly done. There is no diaphragm to wear and need eventual replacement.

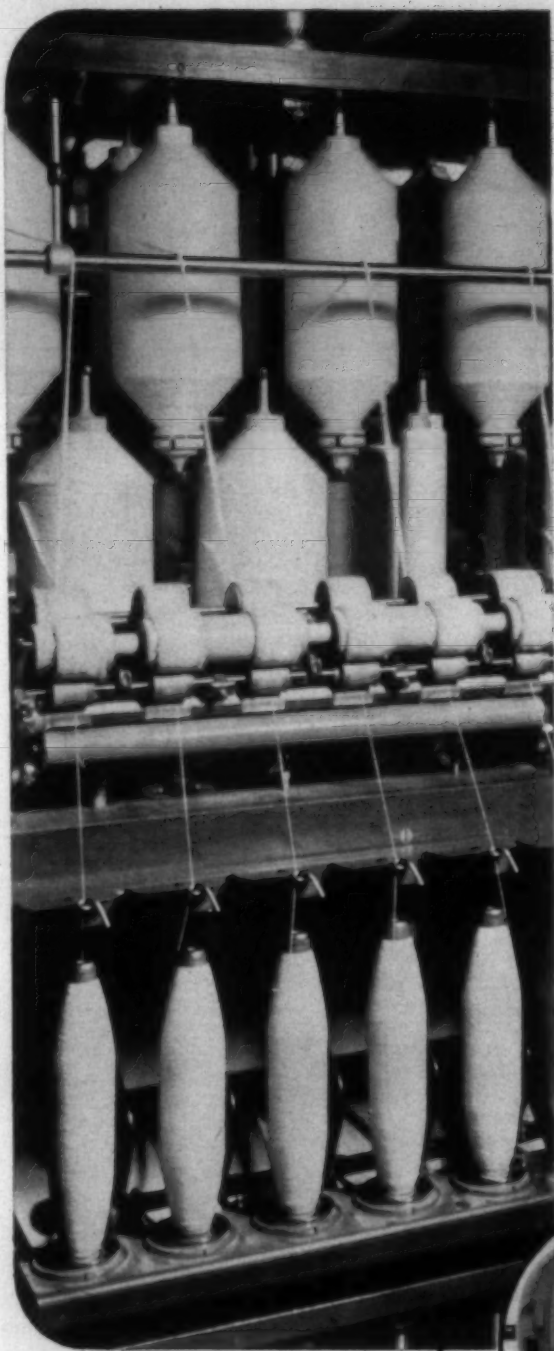
Amco No. 6 *micro-spray* atomizers are the latest addition to a line of humidifying equipment that has been accepted for over half a century. They can be used as original equipment, as replacement or supplementary units on all types of systems. Write for complete details.

AMCO

AIR CONDITIONING SYSTEMS since 1888

Humidification • Evaporative Cooling (Ductless or Central Station) • Refrigeration

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Only **WHITIN** **SUPERFLEX** **Spinning Frames** **provide...**

- Wide Range of Traverse
- Super-Draft System
- Top Quality Product
- Low Operating Cost

TRAVERSE To provide mills with complete flexibility for present or future conditions, the Whitin Superflex Spinning frame has a traverse range of 8" - 11". The frame can be easily set at intermediate positions in the mill. This feature allows mills to take maximum advantage of its spinning frames to produce the most economical sized package.

SUPER-DRAFT® The two apron drafting system, developed, perfected and used by Whitin for twenty-two years, is recognized as outstanding for fiber control and drafting performance. Highly flexible in range of drafts, it is easy to clean and to operate. Reports from mill after mill show that yarn quality is excellent—higher than ever before.

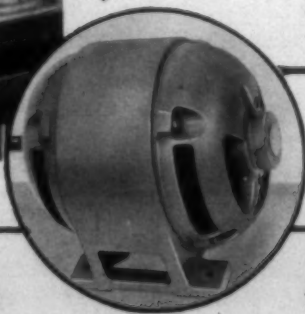
LOW OPERATING COST Whitin-Climax Ball Bearing Top Rolls and Whitin-Cleandraft non-lubricated middle and back top rolls banish oil from drafting zone, reduce picking and cleaning by 96 per cent, lower direct spinning expense and assure minimum operating cost.

OTHER FEATURES

- Easily accessible creel
- Spring counterbalanced ring rail
- Unsurpassed quality case-hardened bottom rolls
- Precision manufacture

LOW POWER CONSUMPTION

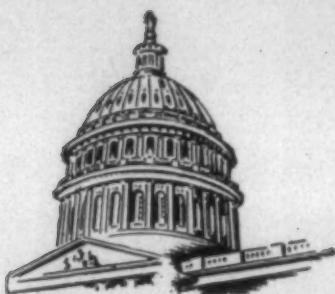
The standard textile motors used keep installation, power consumption and maintenance costs at a minimum.



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WATCHING WASHINGTON

[Exclusive and Timely News from the Nation's Capital]

The President's legislative program as spelled out to Congress, offers a formidable list of undertakings on the home front. Spending proposals are heavy, and equal those of last year, but but he does not ask for new taxes—only for continuance of those already in effect. He wants "technical aid for under-developed countries" continued, but does not propose to renew economic aid abroad.

A new office in the White House, that of Co-ordinator of Public Works, to attain unified control of public works spending, is asked by the President. In addition to supervision of more than \$12 billion in proposed public works spending, the task would seek more effective co-ordination with state and local governments in joint undertakings. Included are highways, flood control, navigation improvements and disposal of domestic and industrial wastes in larger streams.

Few points of difference by either Democrats or Republicans are found in the President's initial statement to Congress. The message was phrased in broad generalities which did not propose new revenues or call for drastic cuts in specific spending. The contention that the country has a "peace-time economy" with huge military spending currently projected was disputed by the Democrats.

Some Democrats ruefully admitted the President had pulled the rug from several New Deal proposals which they had expected to stress in this session. Southern Democrats objected to the proposed 15-cent increase in the minimum wage rate, which they said would force a sharp rise in farm labor costs. But these protests were not so loud as the complaints of Northerners that they had been "outdone" in demands for welfare legislation.

Pay increases of about \$1,650 million for civil service, postal and military personnel are asked by the President. He asks also for an increase in postal rates of about \$233 million to offset part of the cost. The increase for civil service workers would amount to about \$202 million; for military personnel, \$750 million; and the remainder for postal workers. The increase for civil service workers would range from about \$125 a year for low grades to \$800 a year for the high grades.

Special war benefits for persons entering the military service will not apply to those who enter after Jan. 31. Benefits affected include education and training allowances, and federal loan assistance in acquiring homes, farms and businesses. Also ended are non-service connected pensions, and higher pay and hospitalization rights based on "war veteran" status.

Hope for the civil rights proposal, at least through action in this Congress, has been virtually abandoned. The 64 votes needed in the Senate to make changes in its rules cannot be mustered by civil rights proponents. Without a change in the rules, it is unlikely the civil rights bill could be brought up.

Senator Bricker's amendment to limit the treaty making powers of the President is again introduced. The Bricker forces in the last session included



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"IF IT'S PAPER"

1955

28 Democrats, but lost some Republicans in the election. How much strength can be mustered for the amendment this time is not clear.

Union leaders are displeased with just about everything in the President's message to Congress that relates to labor. He asked for a new minimum wage of 90 cents while the unions are demanding \$1.25. They call welfare proposals "too generalized" to be a "constructive program," and suggested changes in the Taft-Hartley Law falls short of what the unions want.

Unemployment compensation paid to idle workers in 1954 amounted to \$2 billion, which was \$264 million above the previous high record of 1949. The increase over 1949 was due to higher benefit rates and to longer duration of payments. Secretary of Labor Mitchell said the states will be asked to make further increases in the amounts of benefits and duration of payments this year.

Union leaders are trying to mobilize sufficient strength in the House or the Senate to launch a full-scale investigation of N.L.R.B. They want examined more than a score of decisions over 18 months that have upset old board practices and policies. It is wholly likely that the Senate Labor Committee, headed by Senator Hill (D., Ala.) will launch the investigation.

Union leaders are disturbed at the probable decision of the House Labor Committee to dig deep into welfare fund abuses with a new sub-committee. The issue is whether to ask for federal supervision and regulation of these funds. The committee does not intend to come before the House with a regulation proposal unless it is supported by a complete and far-reaching study of welfare and pension fund management.

The House has been asked by its labor sub-committee to grant power to continue its investigation of abuses in union and welfare funds. Only a small segment of the field has been explored, a report to the new Congress says, and much work remains to be done. Because of the scope and complexity of the subject, it has not been possible in the time available, the report says, to assemble adequate data on which legislative action can be based.

Federal prosecution of union racketeering, with acts of violence, is urged in the report of another House committee. The Government Operations Committee cites many instances of bombings, extortion, bribery, income tax evasion and conspiracy to evade federal laws. The report says the evidence appears "conclusive" that racketeers are operating under the guise of labor leaders and union officials.

The Hoover Commission is ready to submit reports to Congress on its 17-months study to overhaul the executive structure of government. The proposed changes, the commission thinks, would reduce administrative costs of government up to \$7 billion a year. The commission finds many "vested interests" in the vast domain of bureaucracy which it is doubtful can be fully curbed.

Strong efforts are being made by C.I.O. to induce Congress to give increased economic and military aid to foreign nations. A letter was sent to each member of both branches protesting the "disquieting indications" of curtailment and abandonment of economic and Point Four aid. The letter said the U. S. is "potentially strong enough to afford adequate military aid and increased economic co-operation abroad," while providing an "increasing standard of living at home."

Delivery of "occupant" addressed mail is being abandoned by the Post Office Department after March 31. The recent pyramiding of protests focused attention on large volumes of unaddressed mail sent out to synchronize with prize-winning advertising campaigns, and interfering with delivery efficiency.



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IS THE
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When you specify CARTER TRAVELERS, you insure smooth running work—finer, stronger yarns—simply because there is no substitute for QUALITY. With CARTER TRAVELERS you not only get top quality materials and workmanship, but the assured performance of a product manufactured under rigid scientific control. VALUE is built into CARTER TRAVELERS under the careful supervision of the staff of a modern metallurgical laboratory.

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mill men say:

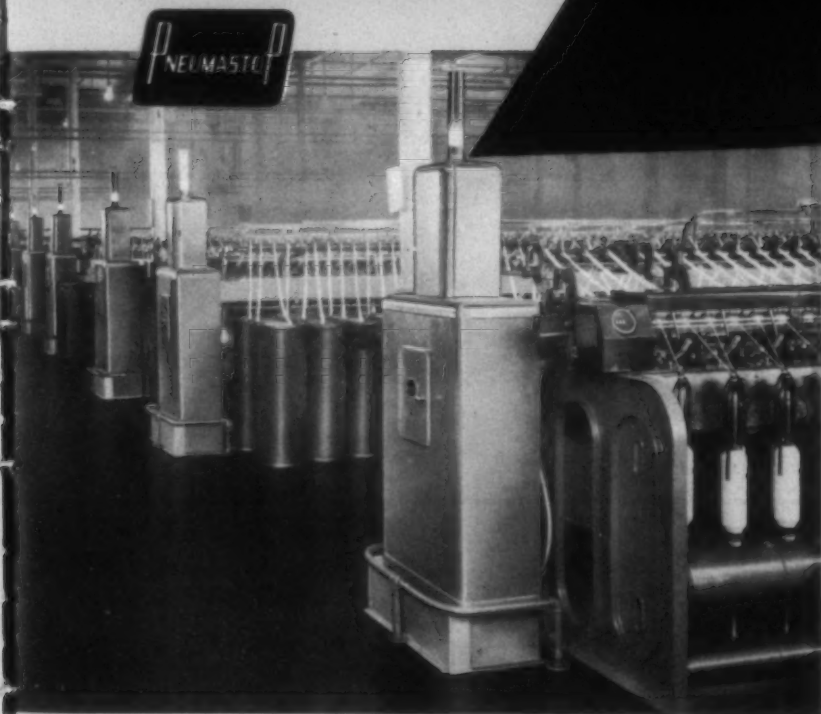
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ASSURES

better roving

better yarn

better cloth



Mr. T. A. Lewis of Highland Park Manufacturing Company says...

"Since installing Pneumastop* on my roving frames, I have noticed a definite improvement in quality of my roving and yarn. I have fewer ends down because the vacuum system immediately picks up a broken end and the frame stops, preventing the broken end from flying over and causing doublings, additional breakouts, or snowstorms.

"My flyers stay cleaner and do not choke up as often because the suction takes in most of the free fibers and fly from around the drafting area. This constant air stream also removes trash from the roving and keeps my frames and floors cleaner, as well as bringing conditioned air to the drafting area giving all round better running frames.

"This better roving spins better by giving fewer ends down and in general a cleaner, better, and stronger yarn."

Let us show you that Pneumastop will accomplish the same results at your mill...*

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Sales Offices: Needham Heights, Massachusetts—Atlanta

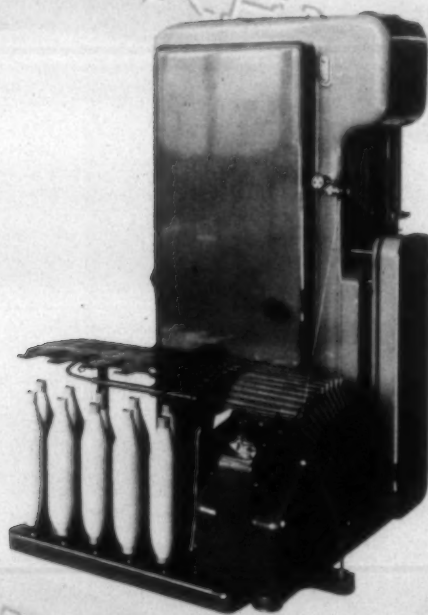
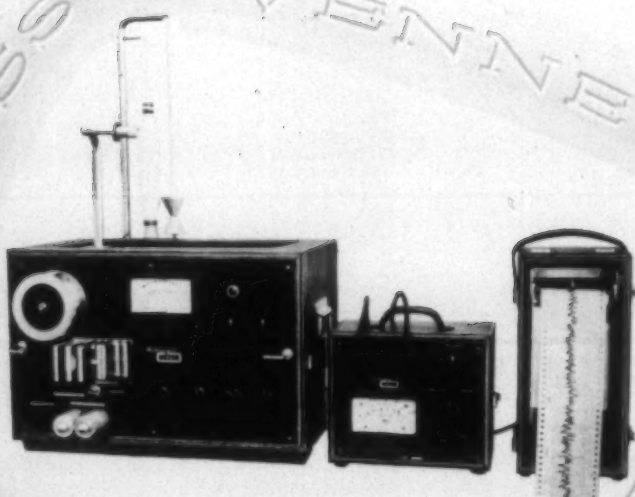
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USTER

For the Textile Industry's Use

— NEW MACHINERY, EQUIPMENT AND SUPPLIES —

14" Coiler Changeovers



14" coiler for older drawing frames uses overcenter lay (Saco-Lowell Shops).

Fourteen-inch coilers for older 5-roll, 4-roll, and 3-over-4 roll Saco-Lowell drawing frames are now available as replacements for smaller-diameter coiler assemblies. The changeover requires only a minimum of new coiler head and turntable parts, the company reports, yet will increase drawing frame efficiency because of longer runs between doffs, as well as reduce direct labor costs. Four-roll and 5-roll frames can both be converted to run the 14" cans which have become popular since they reduce the number of piecings and labor requirements in creeling, doffing and shifting cans. Some estimates go as high as to say that savings of approximately 30% in direct labor and at least 50% in reclaiming reworkable waste are possible when 12" cans are replaced with 14" cans.

The new coiler uses an "overcenter" lay, as shown. In an "overcenter" lay, the coil diameter is greater than the radius of the can, as contrasted with the "butting" lay, as used on some drawing frames, in which the coil diameter is less than the radius of the can. The larger lay not only produces a more uniform pattern in the bottom of the can, eliminating the tangling of sliver which tends to occur when the "butting" lay is used; but also eliminates the hard core of sliver always obtained at the top of the can with the "butting" lay. Thus pyramiding of the stock in the center of the can, necessitating premature doffing, is avoided.

The 14" coiler assembly like the older 12", consists of a horizontal coiler shaft driven by helical gears in the tension gear train, to which bevel gears are attached for driving the coiler head through a compound bevel gear, and driving the turntable through the upright shaft. Changes in parts needed for converting to the larger 14" coiler are said to include new coiler shaft, gears and bearings; new bevel gears, tube gear plates and tube gears; new upright

shaft and lower bushing; and new turntable gears, bottom upright-shaft gear and turntable cover. The 12" turntable base is altered at the mill by cutting out an area in the rim to provide room for the larger-diameter turntable gear. On 4-roll drawing frames, a longer shipper handle is provided to keep the operator's hand from hitting the new and larger tube gear plates when starting and stopping the frame.

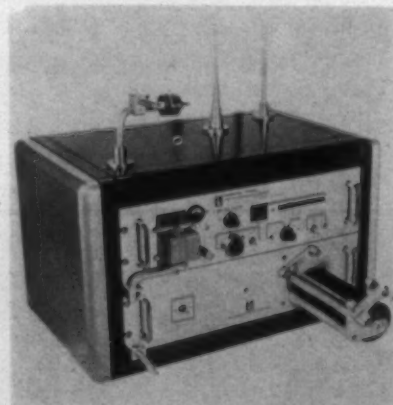
(Request Item No. A-1)

National Blue Salt

The National Aniline Division of Allied Chemical & Dye Corp. has announced the latest addition to its line of stabilized diazonium salts, National Blue 3BVS Salt. It is used to produce, on cotton or viscose rayon, a range of pleasing shades varying from greenish to reddish blue with the various National naphthols. The company reports that most of these colors exhibit very good to excellent fastness to light, washing, soda boil and other wet processing. It can be applied on the continuous padding range, in pressure package dyeing machines and in open tubs, National reports. It is suitable for application by the various printing processes and many of the combinations can be discharged to excellent white with hydrosulfite discharge pastes. National recommends the product for coloring materials for sport and work clothes, children's play clothes and materials that are to be resinfinished. The company points out that couplings with selected National naphthols produce blue shades of excellent light fastness.

(Request Item No. A-2)

Yarn Imperfection Counter



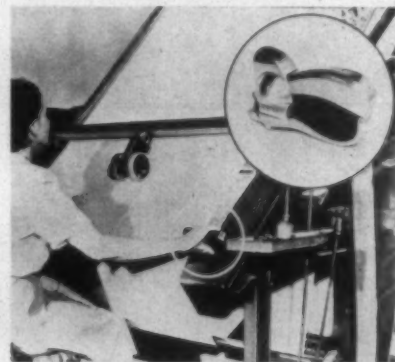
Yarn imperfection counter (Brush Electronics Co.)

Electronic counting of yarn imperfections is now possible through the use of a new instrument developed by Brush Electronics Co. The instrument, the Brush imperfection counter, was designed in co-operation with

the Institute of Textile Technology. An earlier Brush-developed instrument has simplified the measurement of yarn evenness, but the counting of yarn imperfections, such as neps, has since remained a tedious, matter-of-judgment operation, with counts varying from person to person and mill to mill, the company points out. The imperfection counter, however, is said to provide automatic mechanical accuracy for that job—counting the same number of imperfections that might be counted by eye. It is said to be accurate even at speeds of 100 yards per minute. A permanently positioned yarn handling mechanism accepts any size yarn package and all yarn sizes. The number of imperfections is read directly from a counter and no interpretations are necessary. A built-in timing device automatically shuts off the instrument when a test is completed.

(Request Item No. A-3)

Automatic Tagging



Mark-Fix 3 for tagging of cloth (Uster Corp.)

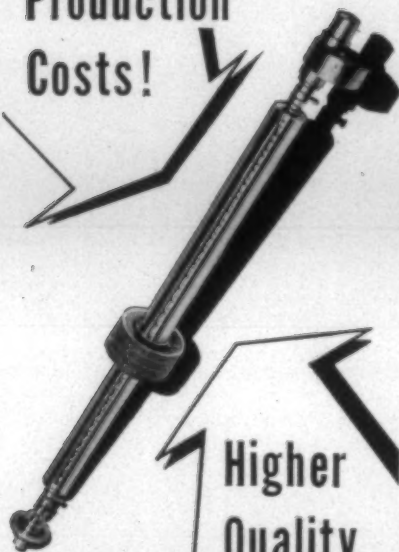
The Uster Corp. has announced the development of the Mark-Fix 3, a device for putting thread tags in the selvages of cloth either on the loom, on the inspection table or in the dyehouse. Said to be as easy to operate as an ordinary stapler, the Mark-Fix 3 inserts any desired color thread loop to mark cloth for defects, mispicks, spots, streaks and in other instances where marking is now done by hand sewing. Uster reports that one Southern mill also uses the Mark-Fix 3 exclusively for making shift marks. The company reports that, from labor savings alone, an annual investment return of over 300% is possible when the device replaces hand tagging at cloth inspection tables.

(Request Item No. A-4)

Anti-Static For Synthetics

Niatex Anti-Static AG-1, a durable anti-static for use on synthetic fabrics, has been announced by Carbide and Carbon Chemicals Co., a division of Union Carbide and Carbon Corp. Niatex Anti-Static AG-1 is

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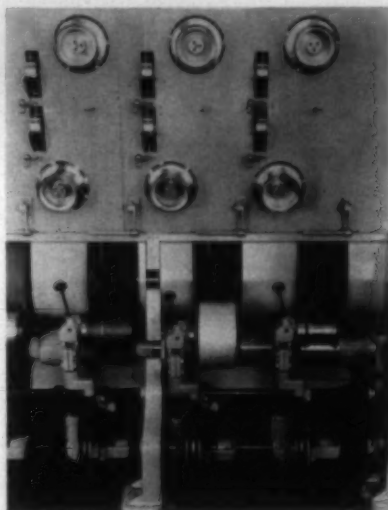
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FOR THE TEXTILE INDUSTRY'S USE—

applied by padding and fixed on the fabric by heat treatment. It is said to give lasting anti-static protection even after repeated washing and dry cleaning and has little or no effect on the hand of the fabric. Anti-Static AG-1 can be applied in conjunction with crease-resistant or water-repellent finishes. (Request Item No. A-5)

Foster Winder



Godet rolls, treatment rolls, traverse cam, chuck (package holder), package on chuck and takeup drive roll in back of package—on Model 403 winder for nylon tow; next step is stretching to proper denier (Foster Machine Co.)

A new winding machine designed to take up nylon directly from the spinnerets is announced by Foster Machine Co. While the new Model 403 Winder cannot be adapted to wind viscose or acetate rayon, and is not recommended at this time for any other synthetic fibers, Foster cites it as proof of ability to cope with any specific winding problem. Foster Model 403 is designed to run at yarn speeds up to 6,000 ft. per min., producing large packages of uniform yarn continuously for 24 hours a day. As it leaves the spinneret, the nylon yarn travels down through a heated hot air chimney past various elements to the winding package, which is driven by a 6" diameter drive roll. The package at no time touches the traverse cam roll, 13½" in diameter, which feeds it.

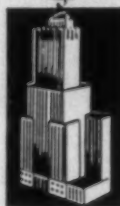
The package core of Model 403 is a standard sizing machine bobbin of 6⅛" outside diameter. Pressure of the package to the drive roll is adjusted and compensated by a spring which automatically compensates for increase in package weight and position of the arm. Complete guard around the shaft on which the package drive roll is mounted prevent yarn from becoming entangled. Design of the cam roll element of Model 403 enables the operator to stop individual cams for inspection or removal of wraps without interfering with the adjacent spindles, Foster states. Reportedly, packages of yarn ranging in size from 15-denier to 1,200-denier have been wound satisfactorily. Driving the package with a separate con-

stant speed drive roll makes it possible to provide a ribbon breaker on the camshaft. Foster points out the important fact that the basic level of the camshaft speed which determines the angle of wind can be adjusted, as well as the amount of ribbon breaking. Hence Model 403 provides efficiently for effective ribbon breaking which is essential for high-speed large-package operation, it is said. Machines which drive the package with the cam roll cannot have effective ribbon breaking unless the speed of the yarn is varied. Synchronous motors drive the roll shaft and both feed rolls. Variable speed units drive the cam shaft and the finish rolls, which latter may be driven from 0 to 72 r.p.m. Finish rolls are partially immersed in stainless steel tanks, which are individual for each roll, containing 2 compartments. The finish solution is introduced into 1 compartment and then runs over an adjustable gate into the other compartment and thereafter runs out to a return tank.

In operating Foster Model 403, the operator takes the bundle of yarn as it comes from the spinneret, wraps it around the lower feed roll and allows it to wrap itself on the upper feed roll. He then pushes the package roll up to the drive roll and starts the tube rotating. Taking a loop of yarn from the upper feed roll, he pulls it down to the package tube and wraps it quickly there, at the same time pushing the tube against the drive roll. This breaks one end of the loop and winding starts immediately;

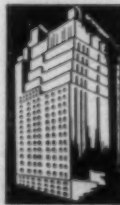
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WEST SIDE
ALL 'ROUND
NEW YORK**

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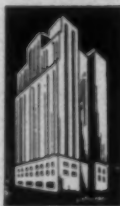


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the cam is self-threading if the yarn line goes over the center of the cam. The operator then removes the wrap of yarn from the upper feed roll. The standard Model 403 is presently built on a 16" center to center of the spinnerets or spindles. Drawings have been made for 16½-ga. and 16.14" ga. machines. Largest machine now being produced is of 56 spindles with 2 drives, each driving 28 spindles. Each half of this machine can be driven separately, so that it is possible to shut down only half of the machine if desired.

(Request Item No. A-6)

Indicating Controller

An indicating controller in the low price range for use on simple industrial processes has been designed by The Foxboro Co. Designated the Model 41A pneumatic controller, it replaces the earlier Model 41, providing sharp on-off or narrow band proportional control of such variables as temperature, pressure, liquid level and humidity. When equipped for on-off action, the new controller "snaps" the control valve from fully opened to fully closed when the measurement crosses the control point, handling any process with large capacity-demand ratio and negligible lag, the company reports. For a process requiring throttling action, the Model 41A is equipped with a proportional unit adjustable from ¼ of 1% up to 25% of scale. The unit, a simplified blast feed-back proportioning mechanism used in Foxboro's Model 40 narrow band controller, relies on air jet rather than bellows actuated



Model 41A indicating controller (Foxboro Co.)

"follow-up" action. "Left-to-right" indicating scale with white-on-black numerals and graduations has been lengthened to 5", improving readability and accuracy. Internal components, many of them standard Model 40 parts, have been rearranged to simplify routine instrument maintenance. Although case size is only 11¼" x 9" x 4¾", standard Foxboro measuring elements are easily accommodated. Serving a variety of textile processing needs, the Model 41A is used for control of temperature (size storage kettles, etc.) pressure (production steam to individual equipment such as J-boxes); humid-

ity (relative humidity of process rooms); and liquid level (open storage tanks, etc.). (Request Item No. A-7)

Leesona Stretch Yarn Machine

Confirming earlier reports, the Universal Winding Co. announces the release for sale of its new No. 550 Leesona stretch yarn machine. This machine has been designed to meet the requirements of the many applications of the increasingly important and popular "stretch" synthetics. It is said to provide maximum production at a minimum investment in machinery and floor space. Simultaneously, the company also announces the acquisition by purchase of the Permatwist patent applications, which broadly cover the processes and apparatus necessary to the continuous process manufacturing of these "stretch" yarns, and the purchase of existing Permatwist or so-called Flufion licenses. This will enable Universal to offer its customers a free choice of 2 alternate types of equipment, it is pointed out.

(Request Item No. A-8)

Steel Shelving

A line of steel shelving, whose many different combinations permit the custom assembling of an installation for virtually all kinds of storage needs, has been introduced by Standard Pressed Steel Co. The shelving, which comes with or without sides and back, can be arranged for use along production lines and in tool shops. It is manufactured to such close tolerances that components and

Nutting

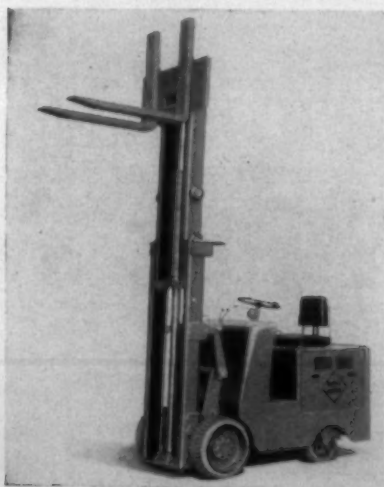
TRUCKS



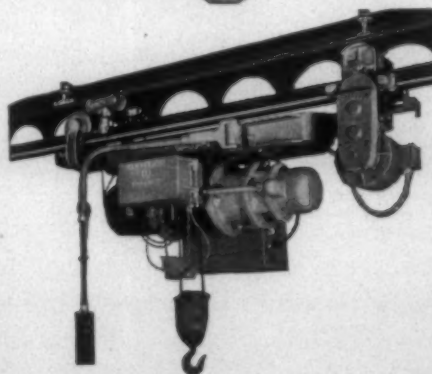
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OUR STORAGE EQUIPMENT LINES INCLUDE AMERICAN BOLTLESS PALLET RACKS, DELUXE STEEL SHELVING AND ALL-STEEL LOCKERS

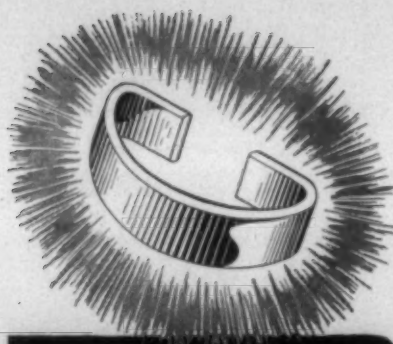
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JAMES H. CARVER, BOX 22, RUTHERFORDTON, N. C.
CRAWFORD "JACK" RHYMER, BOX 2261, GREENVILLE, S. C.

FOR THE TEXTILE INDUSTRY'S USE—

assemblies are completely interchangeable, the company reports. Each component is formed in no more than 3 operations and thus repositioning, with its attendant inaccuracies, is reduced to a minimum. All holes in 1 piece are pierced simultaneously, it is said. Shelves come in 35 different sizes, from 24" by 9" to 48" by 36". The shelves are of 18-ga. steel. Posts, which are available in both 11 and 13 ga., can be had in heights of 3' 3" to 10' 3" by 1' increments. The posts, of course, determine the height of the shelving assembly. For heights beyond 10' 3", standard post lengths can be spliced. Holes in the posts are on 1" centers. Consequently, shelf heights can be varied from 1" to as large as desired. Ledge type units, both open and closed, are available for use when greater shelf capacity is required in the lower compartment than above. Also counter-height shelving units are available. (Request Item No. A-9)

Eyeglass Protection

Watchmocket Optical Co. has announced a new type of safety eyeglass clip-on lenses called Tuc-Over. The safety clip-on reportedly provides shatterproof lenses in an unbreakable frame of tough, resilient polyethylene so light it floats. According to Watchmocket, Tuc-Overs snap on or off prescription frames in a jiffy yet are held firmly in place by plastic clips which are designed so as to never scratch either frame or lenses. The safety equipment prevents breakage or pitting of prescription lenses, and can be used, with shatterproof green lenses, to cut out glare from sun or other light sources. Overeyes protection is provided by the visor which extends back to the forehead to block out such particles as dust, fly, perspiration, glare, etc. The clip-ons are made in 2 sizes to fit all prescription glasses frames. Optically perfect shatterproof Methacrylate "eyesaver" lenses, .080" thick, prevent eyestrain

due to distortion, the company reports. Lenses are available in light or medium green, and the frame can be obtained in a choice of translucent white or green.

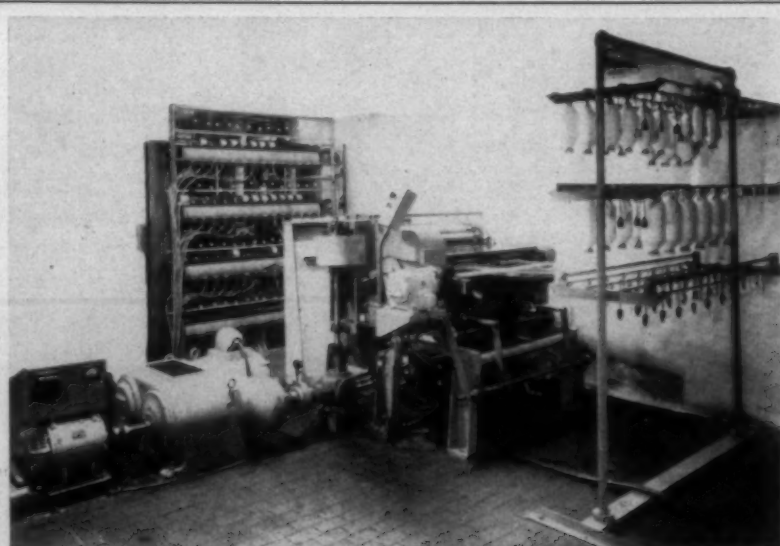
(Request Item No. A-10)

Safety Cans



Trigger-grip safety can (Eagle Mfg. Co.)

A complete new line of safety cans for use wherever explosive or flammable liquids are handled is now being introduced by Eagle Mfg. Co. Featured in the new Eagle series, approved by Underwriters Laboratories and Factory Mutual, are safety cans of 5 sizes: 1 qt., 2 qt., 1 gal., 2½ gal., 5 gal. The 3 smallest sizes feature a 1-handed trigger-grip handle, while the 2 largest safety cans have free-swing handles. Both types have a self-adjusting protective guard cap




THE NEW TEK-JA MACHINE by Proctor & Schwartz Inc. produces a yarn without twist. To the right is the creel which feeds roving to a draw frame. Roving then goes through rub motion. At far left is the winder. The dryer is between the winder and main cylinder. Two pilot machines are now available for production of samples and test batches.

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When only the **best** in naphthol
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Dominion Anilines & Chemicals, Ltd.
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AAP

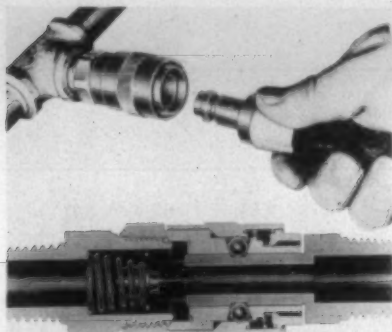
AMERICAN ANILINE PRODUCTS, INC.

FOR THE TEXTILE INDUSTRY'S USE—

which prevents leakage if can is upset. All Eagle safety cans are of 1-piece construction with no seams, as body and breast are welded together electrically under electronic control. The entire line is made from heavy 24-ga. terne steel which is given a high-gloss red baked finish. Bottoms are reinforced with heavy-gauge steel hoops.

(Request Item No. A-11)

Quick Couplings



Pushomatic quick connect and disconnect hose couplings (Breco Div., Perfecting Service Co.)

Perfecting Service Co. is introducing a complete line of patented quick connecting and disconnecting hose couplings which feature 1-hand operation without turning or

twisting to lock. The coupling automatically locks, making a high pressure leakproof connection. The integral check valve automatically shuts off line or hose pressure when disconnected, preventing danger of backlash or whipping. The company points out that the greater flow, full 360° swivel action and extremely small diameter of these couplings make neater and lighter hose connections. A variety of styles and types of couplings and connecting plugs are offered in sizes from 1/8" through 3/4" with application up to 10,000 p.s.i. The new 1A series is especially designed for instrumentation, manifold and panel installation where space is limited. The 2A series is designed for pneumatic tools, air, water and hydraulic supply lines.

(Request Item No. A-12)

Demineralizer

Of interest to textile plants is the announcement of a new product for the purification of water used in humidifiers, air conditioning equipment, laboratories, etc. manufactured by Barnstead Still & Sterilizer Co. Known as the Barnstead Pressure Bantam demineralizer, it is designed to remove all ionizable impurities from raw water by a process called ion-exchange. The unit does this under pressure so that it can be piped to any desired point, it is said. It is described as a compact, wall-mounted demineralizer which operates as a filter. When the purifying resins become exhausted, a replaceable cartridge is changed easily. No heat or cooling water is required. Chemi-



Pressure Bantam demineralizer (Barnstead Still & Sterilizer Co.)

cally pure water is delivered under pressure at flow rates between 5 and 25 g.p.h. An indicating light, called a Pura-Lite, goes out when purity of the water gets below 50,000 ohms resistance to show that the purifying cartridge needs changing. Full particulars may be had by using the reader service request card provided on Page 51 of this journal.

(Request Item No. A-13)

Portable Abrasion Tester

Taber Instrument Corp. has developed a new portable model abrasion resistance tester, Model 140PT, which the company reports can handle virtually any testing job the standard laboratory model tester can do. The company describes its new model as a durable precision built test instrument designed to evaluate the resistance of surfaces to rubbing abrasion for all types of fabrics. Results are easily read and minimum technical experience is necessary to conduct scientifically accurate tests, it is said. The portable set weighs 52 lbs. and the main unit measures 26" X 11 1/2" X 9 1/2". It operates on 115 volts, 50/60 cycles. Additional information on the Model 140PT tester, along with similar data on the standard Model 140, is contained in the company's Bulletin No. 5409, which can be obtained by using the reader service request card on Page 51 of this issue.

(Request Item No. A-14)

Portable Ultra-Violet Unit

A new Mineralight long-wave ultra-violet lamp with important applications particularly adaptable to the textile industry, is announced by Ultra-Violet Products Inc. The manufacturer reports that, when directed at

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SLASHER CLOTH

Special Chemical Treatment
Definitely New and Better

Slasher Cloth is an important maintenance item in a cotton mill. With the introduction of ORR Slasher Cloth with Special Chemical Treatment, many of the problems which have plagued the slasher room foreman have been eliminated.

The slasher room foreman, in order to satisfy the superintendent and the cost department, must have available a Slasher Cloth that:

1. Dresses the yarn properly.
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4. Starts fast—lasts long.

ORR Special Treated Slasher Cloth maintains uniform dressing properties, resists bacteria and steam degradation, maintains dimensional stability. Discuss your Slasher Cloth problem with your ORR representative.

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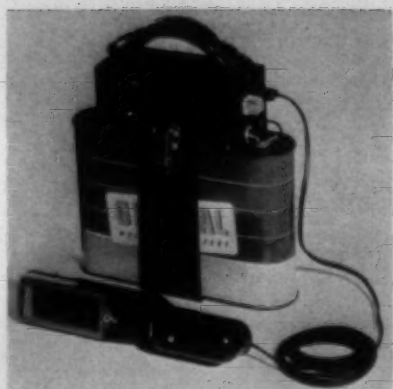
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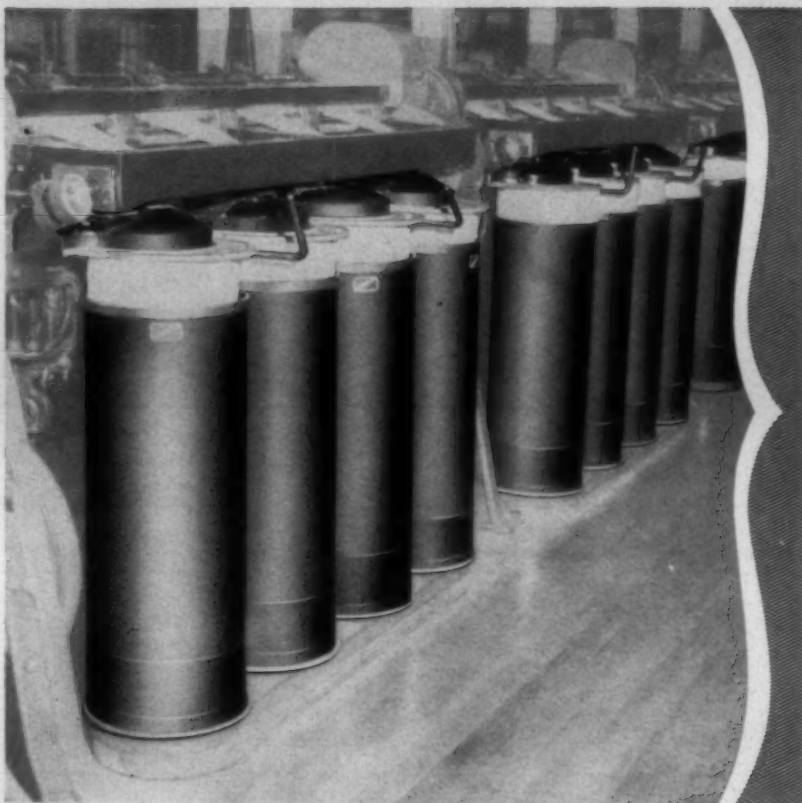
Portable Mineralight (Ultra-Violet Products Inc.)

certain substances, the invisible "black light" rays cause a phenomenon known as fluorescence, whereby these substances radiate a color different from their own. Thus variations that are invisible, or nearly so, in ordinary white light, stand out with clarity when exposed to ultra-violet. This makes the lamps extremely useful for (1) observing, analyzing and comparing materials, weaves and dye lots; (2) inspecting for flaws and variations; (3) "invisible" marking during manufacture; (4) locating oil spots on fabrics and tracing to their origin; and (5) displaying and merchandising manufactured items. Mineralights are Underwriters' Laboratories approved. The new unit consists of a Model SL 3660 long-wave Mineralight for a.c. operation, and a 6-volt adapter for use with a portable "hot shot" battery or other 6-volt source. Full information on ultra-violet light and its application in the textile industry can be obtained by using the reader service request card provided on Page 51 of this publication. When requesting information, please specify proposed application, giving full details, so pertinent data may be sent.

(Request Item No. A-15)

High-Capacity Chlorinator

An improved high-capacity solution feed type chlorinator with a corrosion-proof polymer-impregnated fiber glass cabinet that never requires painting, has been developed by the Fischer & Porter Co. Use of the diaphragm regulator principle permits a safe, reliable, mechanically-enclosed chlorinating machine constructed entirely of corrosion-resistant materials, the company reports. Manual adjustment of chlorine gas injection is made by the rate valve on the front of the cabinet, and the actual flow rate is observed through the glass flow meter. Six metering tube and float combinations, interchangeable from the front of the cabinet, provide 10 to 1 or greater overlapping flow ranges from a minimum of 100 lbs. per day to a maximum of 8,000 lbs. per day of chlorine gas. In addition to manual chlorine flow rate adjustment, the chlorinator is available with the following automatic functions: (1) automatic proportioning by a transmitted pneumatic signal from an orifice, venturi, or variable-area flow meter; (2) automatic proportioning by mechanical connection to a float in a flume, weir or tank; (3) remote pneumatic set; (4) program controlled operation; single, or multi-



HOW SOUTHERN STATES COMPLETE COILERS AND CONVERSION UNITS CUT CARD ROOM OPERATING COST

Mill case histories prove over and over that Southern States coiler conversions pay for themselves in less than a year!

Adding up to lower operating costs and savings you can see are—larger cans with increased capacity... renewed life of old coilers, longer life of new coilers... lower maintenance costs... smaller parts inventories... simplified, more efficient handling... plus improved quality.

Recognizing that each mill is faced with different problems, Southern States has produced the most complete line of coiler and coiler conversion units available to the industry. Thus, regardless of sliver handling methods, or condition of existing equipment, Southern States makes it possible for your mill to enjoy all the advantages of larger cans at a price you can afford.

Complete details are in our Bulletin 201, which we'll send on your request. Better still, let our representative show how Southern States conversions can cut your card room costs.



SOUTHERN STATES

EQUIPMENT CORP.

HAMPTON, GEORGIA

The Textile Shops

Acid Tanks	Coppersmithing	Picker Screens
Ball Bearing Journal Assemblies for Slashers and Dry Cans	Cowl Ventilators	Perforated Metal
Bleaching Tanks and Tubs	Cylinders	English Wire Cloth
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Repaired, New	Spooling	Pneumatic Conveying Systems
Card Screen Bars and Ribs	Twisting	Quill Cans
Card Screen Lickerins for Cotton and Rayon	Drip Pans	Rolls of All Types and Sizes
Chemical Tanks	Dye Kettles and Vats (New)	Size Kettles
Condensers	Dry Cans	Tanks
Condenser Screens	New and Repairs	Waste Screens
Conveyors	Driers	Special Machines
Pipes and Returns	Filters	Custom Built
	Misc. Sheet Metal Work	

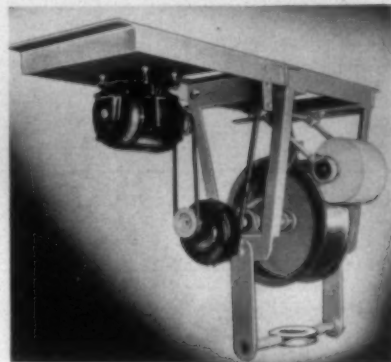
SPARTANBURG, SOUTH CAROLINA, U. S. A.

FOR THE TEXTILE INDUSTRY'S USE—

ple cam-operated; (5) timer sequence control; (6) automatic pump sequence control; and (7) automatic start-stop control.

(Request Item No. A-16)

Adaptable 3-Way Reel




Improved 3-way reel (Wiesner-Rapp Co. Inc.)

An improved 3-way reel with features which are said to make it readily changeable from an idler reel to a driven or drag reel, has been announced by the Wiesner-Rapp Co. Inc. Made up of standard interchangeable stocked parts, these reels can be furnished as a basic unit, idler reel, as a driven-type reel and as a drag reel by addition of a rubber-covered rider roll. When furnished as a driven or drag reel, the units can be supplied with or without either drive motor and/or speed reducers. The inter- any time to suit most mill requirements, it changeable features permit change over at is said. Other features of the reel are large-diameter stainless steel flanged drum-type reel, welded steel framework which supports the various parts in a compact integral unit, stainless steel pot-eye that can be positioned through an 180° arc, heavy-duty reducing unit and a standard drive motor. The manufacturer reports that the reel has been thoroughly tested in actual mill operation and has proved its usefulness as an idler, driven and drag reel. Large surface contact between the reel and rider roll insures an even pull without distortion to even lightweight fabrics.

(Request Item No. A-17)

Corrosion-Resistant Primer

LockPrime, the corrosion-resistant liquid primer for new or corroded steel surfaces, has been developed in the laboratories of the Pennsylvania Salt Mfg. Co. The new primer, which can be applied by brush or roller directly from the can, is said to offer excellent resistance to under-cutting by corrosion when cover coats are mechanically damaged. On either sandblasted new steel or wirebrushed rusted steel, LockPrime reportedly forms a tight adherent bond to the surface and provides excellent adhesion for following top coats of Pennsalt NeoCoat (liquid neoprene) or Pennsalt Thickcoat, a chlorinated aliphatic hydrocarbon. It is equally effective in acidic and organic atmospheres, Pennsalt reports. Applicable to all ferrous metal surfaces, tile red Lock-



EVERYBODY'S TALKING ABOUT...

The assistance given to cotton weaving mills by Penick & Ford's Technical Representatives enabling them to operate at lower humidities without loss of efficiency.

PENICK & FORD, LTD.,

INCORPORATED

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CEDAR RAPIDS, IA.

ATLANTA, GA.

DALLAS, TEXAS

SPARTANBURG, S. C.

Prime contains 28% solids content by weight and covers 200 sq. ft. per gal. per 1 mil coat. Since the bond strength of this primer actually increases with age, immediate application of the top coat is said to be unnecessary. As a basic component of the Pennsalt NeoCoat-Thickcoat system, Lock-Prime is now available in 1 gal. cans and 5 gal. drums. (Request Item No. A-18)

Floor Lathes



Self-contained motor drive floor lathe (South Bend Lathe Works).

A new line of popular priced 9" swing and 10" swing self-contained motor drive floor lathes has been introduced by the South Bend Lathe Works. Designed to combine the advantages of floor mounting with the economy of bench lathe construction, these new models have the usual South Bend features. The 12-speed self-contained motor drive unit is permanently mounted back of the lathe headstock. Approximate spindle speeds are 48 to 1,435 r.p.m. for the 10" lathe and 50 to 1,270 r.p.m. for the 9" lathe. Direct belt drive to the spindle assures smooth operation at high speeds, the company states. Slow spindle speeds are driven through back gears. A quick-acting belt tension release permits releasing the tension of the cone pulley belt to change speeds. Heavy cast-iron legs provide support for the lathe bed. Chip pan is welded steel construction with roll rim all around the edge. Four bed lengths are available providing distances between centers ranging from 16" to 34". The 9" lathes take work up to 9 1/4" in diameter over the bed and 5 1/2" in diameter over the saddle cross slide. Maximum swing for the 10" lathes is 10" over bed and 6 1/4" over cross slide. Both the 9" swing and 10" swing lathes are made in quick change gear and standard change gear models. Quick change equipment provides 48 screw thread 4 to 224 per inch, 48 power longitudinal feeds .0015" to .0255" and 48 power cross feeds .0004" to .0255". Standard change equipment provides 45 threads, 4 to 160 per inch.

(Request Item No. A-19)

Saran Resin

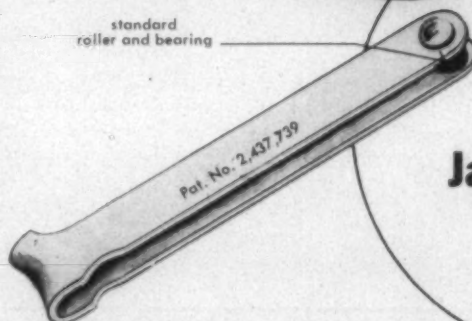
A new formulation of saran resin for monofilaments has been developed by The Dow Chemical Co. The new material is al-

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**Dobby
Loops***

standard
roller and bearing



**Virtually
Eliminate**

**Jack Lever
Wear**

The roller bearing feature
of these Dobby Loops gives you the smoothest
rolling harness you ever saw.

Steel stamped construction gives you

approximately three times the strength
of the usual cast iron types. Cleats
and rollers are case hardened steel.

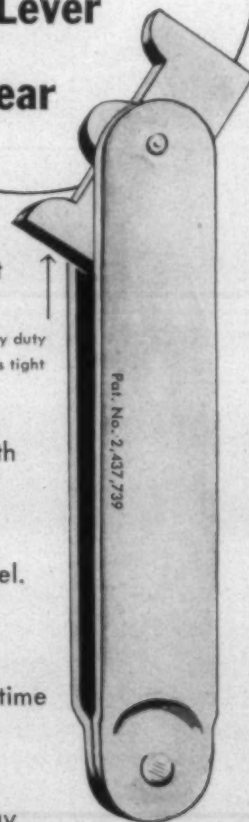
You will save considerable money in
replacement costs and in shut-down time
when you install Dodenhoff Anti-Friction

Dobby Loops. Order a supply today
or write for samples and prices.

Carried in stock.

* Patented

Heavy duty
holds tight



W. D. DODENHOFF CO.

INCORPORATED
GREENVILLE, SOUTH CAROLINA

FOR THE TEXTILE INDUSTRY'S USE—

ready proving of keen interest to the weavers of saran fabrics for lawn furniture, automobile seat covers and upholstery and window screening. Also it is expected to enter new markets such as venetian blind tapes and awnings. The formulation, resulting from an intensive research and development program by Dow, is said to offer greatly improved light stability, controlled shrinkage, reduction of static and good extrudability. The resin retains other features, including toughness, resistance to mildew or stain and excellent cleanability, Dow reports, and fabrics woven of the improved saran show several times the light stability of the former resin widely used in the textile field in re-

cent years. This property plus a lighter base color of material permits broader color range including pastels. The result will be improved color styling of all fabrics, Dow points out. (Request Item No. A-20)

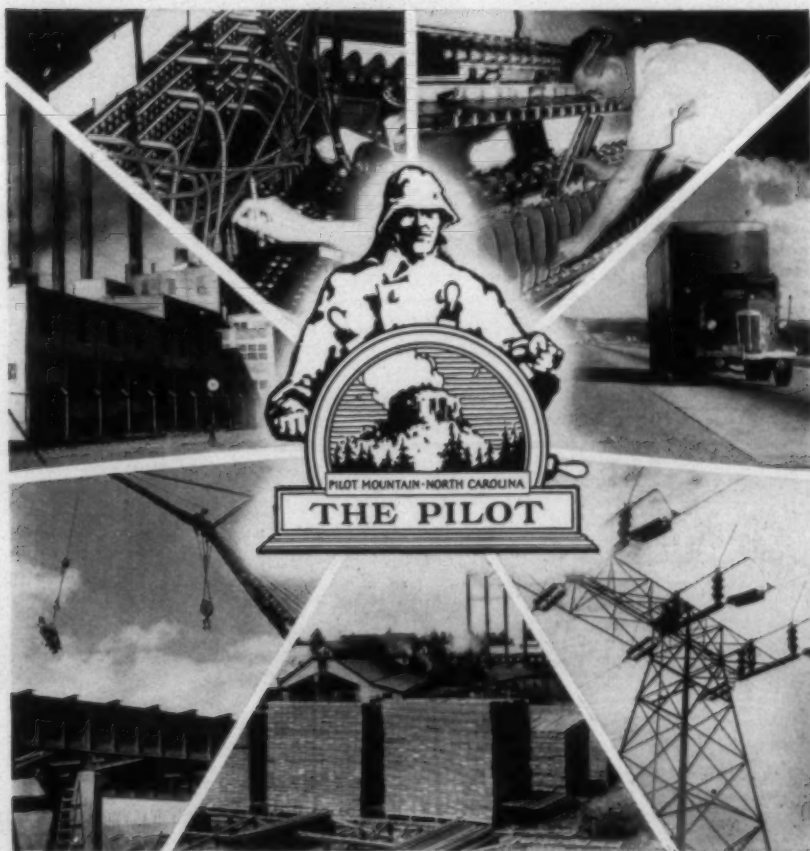
Portable Dryer

C. G. Sargent's Sons Corp. announces a new, portable, completely self-contained dryer available on a rental, a rental-purchase or outright purchase basis. It is believed to be the first such machine to incorporate every known feature of a research laboratory dryer with the advantage of portability. This new dryer is full-size, not a midget or junior model. It is fully instrumented. It uses either steam-heated or electrically-heated air. The heavy-duty ball bearing casters on

which it is mounted lock securely when dryer is positioned at the job or in the laboratory. After the usual steam and electrical connections have been made, the dryer is ready to go to work. It may be moved quickly and easily to any location, wherever or whenever needed, the manufacturer reports.

Designed primarily as a research laboratory dryer, it is equipped for tray drying or for pole, roll or plate drying, as desired. All gages, valves, control and recording instruments and charts are mounted on the face of the dryer to make it an integrated, self-contained unit. It may be operated manually or automatically, or in combination, and each variable, including air velocity, in the drying process may be changed at will without disturbing any other factor, it is said.

(Request Item No. A-21)



The Pilot works with management — building business by protecting workers!

From the telephone switchboard to the textile mill the protective arms of The Pilot cover all phases of Southern industry. Individually tailored group insurance programs stimulate profits and production by improving employee relations, reducing labor turnover, and attracting competent help.



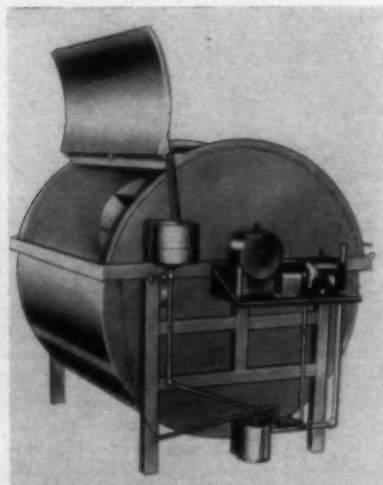
Do You Have a Group Insurance Plan? Write or Wire

Pilot Life Insurance Company

GROUP DIVISION • GREENSBORO, NORTH CAROLINA

PILOT TO PROTECTION SINCE 1903 • O. F. STAFFORD, PRESIDENT

Dyeing Machine Cover



Paddle-wheel dyeing machine with improved cover design (Klauder Weldon Giles Machine Co.)

Klauder Weldon Giles Machine Co. has introduced an improved cover design for its paddle wheel type dyeing machine. The large front door of this cover is counter balanced for automatic opening, substantially easing the operators work and eliminating the danger of handling a heavy cover over a hot dye bath, the company reports. The new cover is now available on all paddle wheel dyeing machines manufactured by the company in sizes from 20 to 500 lbs. (Request Item No. A-22)

New Size Cradle Roll

A new development in the air guider field is the use of a 2 3/4" rubber cradle roll instead of the 2 1/2" O.D. roll until now considered standard on air guiders. According to Guider Roll and Service Co., the new, larger size roll is much more economical than the smaller roll because it has to be re-covered less often, eliminating much waste. The company is now marketing the new roll which, while it has an outside diameter of 2 3/4", has an inside diameter of only 1 1/4". This gives the larger roll 3/4" of rubber all around.

(Request Item No. A-23)

For the Mill Bookshelf

Vulcanized Fibre Products

National Vulcanized Fibre Co. has announced the release of 3 brochures describing (a) materials handling equipment for textile plants; (b) vulcanized fibre; and (c) Phenolite, a versatile laminated plastic material. Theme of the 8-page booklet on vulcanized fibre is the solution of production and design problems by "Sherlock" fibre. Treating the company's vulcanized fibre products, the booklet portrays the material in the role of the famed detective. "Sherlock" cracks tough production "cases" and offers designers a host of desirable product features. The brochure also spells out numerous applications for vulcanized fibre and describes how it is processed and fabricated.

The story of Phenolite is told in a 12-page brochure. Interesting action pits "Champ" Phenolite in a 10-round battle against "Ogre Oscar," manufacturer's nemesis and purchasing agent's nightmare, who typifies production line headaches and low product quality. The 2-color brochure also describes Phenolite manufacture, fabricating facilities and numerous end uses for the material. The materials handling brochure points out the many uses of vulcanized fibre in doffing trucks, mill boxes, trays, barrels, roving cans, etc.

(Request Item No. A-24)

Acrylo-News

American Cyanamid Co. has announced the release of the latest in a series of information brochures entitled *Acrylo-News*. The publication lists a number of items and abstracts, gathered from many sources, that indicate a few facets of current research with Aero Acrylonitrile, American's highly stable bi-functional chemical which the company reports is finding increasing use as a reactive intermediate.

(Request Item No. A-25)

New And Improved Electrical Instruments

General Radio Co. has announced the release of 3 new bulletins describing recently developed or improved instruments. The Type 1570-A automatic line-voltage regulator is described as useful wherever it is desirable to keep the line voltage constant. General states that it introduces no distortion and can handle any load up to 6 k.v.a. for the 115-v. model or 5 k.v.a. for the 230-v. model. Variac motor speed controls also have industry-wide applications, the company points out. They provide very smooth speed control over a wide range of speeds and are available in models from 1/15 h.p. to 1 1/2 h.p. They are designed for simple installation and operation as well as for long, maintenance-free life. The Type 1862-B Megohmmeter, General reports, provides 2 test voltages, 50 to 500 v. for the

measurement of high resistance. It is said to be especially useful for checking insulation resistance on all types of equipment and will measure up to 2 million megohms. It is also useful for production testing on components. (Request Item No. A-26)

Subminiature Precision Switches

Micro Switch, a division of Minneapolis-Honeywell Regulator Co., has announced the availability of a new 2-page information sheet describing the company's environment-proof subminiature precision switches. The data describes the 1SE series of sealed subminiature switches as the smallest and lightest weight switches of this type available. Operating characteristics are included as well as a specification sketch.

(Request Item No. A-27)

Quality Control Through Statistical Methods

(Rayon Publishing Corp., 303 Fifth Avenue, New York City 16; \$5.)

This book was written by Norbert Lloyd Enrick of the Institute of Textile Technology, Charlottesville, Va. It is based upon 10 years of actual installation experience in a large number of mills—cotton, woolen and worsted and filament—and applied to spinning, weaving, knitting, finishing and cut-make-and-trim items. Applying statistical laws of chance fluctuations to the problem of sampling variations in textiles and textile testing, the author shows methods for determining proper testing and control frequencies. The author has also developed a new method of process analysis, whereby variations within machines and between machines can be traced from process to process, opening through spinning. In this way, any department where excessive variations are introduced can be quickly identified and corrected. Written from practical experience, the examples utilized are numerous, supplemented by graphs, charts, diagrams and tables. (Request Item No. A-28a)

Adhesion And Adhesives—Fundamentals And Practice

(John Wiley & Sons Inc., 440 Fourth Avenue, New York City; 229 pps.; \$9.75.)

This new book contains a collection of the papers read at 2 conferences that were held simultaneously at the Case Institute of Technology and in London. At these symposia, the motivating factors were the rapid expansion of high polymers in industrial use, and the increasing appearance on the market of more versatile adhesives for use in structures and protective coatings. Edited by F. Clark of the Society of Chemical Industry in London, and John E. Rutzler and Robert Savage, both of the Case Institute of Technology, the new book brings together the research material of 53 specialists who

met at the conferences. Discussions in theoretical fundamentals cover such topics as joint strength, solid-solid interfaces, fluids and molecular and intermolecular forces. In the papers dealing with practice, the authors cover the use of adhesives in textiles and other industries. (Request Item No. A-28b)

General Aniline Dyestuffs

The Dyestuff & Chemical Division of General Aniline & Film Corp. announces the release of the following new circulars: G-776, Fastusol Orange LAGU-CF; G-779, Rapidogen Black ITA; G-784, Chromoxane Brilliant Red BL; G-787, Fastusol Orange L6GU-CF; and G-789, Algol Printing Black WW Conc. Paste.

(Request Item No. A-29)

Canned Rotor Pump Design

A recently published 12-page paper detailing the design and development of centrifugal pumps that have no seals or stuffing boxes is now available from the Chem-pump Corp. The article covers design history, early experimental work and outlines the basic problem of building an electric motor inside a pump. Included are detailed data and curves regarding temperature, pressure and the effects of the unusual pump design on electric motor operation. New developments in the canned rotor pump field are discussed, and a series of operational case histories are given.

(Request Item No. A-30)

Battery Selection Techniques

Battery selection techniques are emphasized in a revised edition of a manual announced by The Electric Storage Battery Co. The manual deals with storage batteries for stand-by power, emergency lighting and switchgear applications. A discussion of charging equipment and simplified battery maintenance also is included. Storage battery installation procedures are described and illustrated by numerous photographs. The publication is designed for engineers, supervisory personnel and trained personnel in industrial plants requiring emergency lighting or uninterrupted power for any purpose. The manual, No. 210, contains 20 pages. (Request Item No. A-31)

Ketosol Solvent 75

Ketosol Solvent 75, a mixture of acetophenone and phenyl methyl carbinol, is described in a 4-page technical bulletin released by Carbide and Carbon Chemicals Co., a division of Union Carbide and Carbon Corp. Information is given on properties, container contents, methods of handling and potential applications. The solubilities and uses of Ketosol Solvent 75 are com-

FOR THE MILL BOOKSHELF

pared with those of its constituents. Ketosol Solvent 75 is described as an excellent dye carrier for Dacron polyester fibers and blends of Dacron polyester fibers with wool and viscose. It promotes uniform dyeings at temperatures as low as 180° Fahrenheit. Since Ketosol Solvent 75 is soluble in the concentrations required, preparation of an emulsion is not necessary, the bulletin explains. The low toxicity of the compound is another important advantage in this application. (Request Item No. A-32)

Tooling Costs

Tools, Dies and Special Machinery on a

No Risk Basis is the title of a 4-page bulletin issued by Mechaneers Inc. How special machinery, tools and dies for producing new products or cutting present costs may be obtained without capital investment and by paying out of profits is outlined in this new bulletin. (Request Item No. A-33)

Rowe Ramps

Complete engineering details and other information concerning the use and installation of its hydraulic adjustable ramps for loading docks are featured in a new 4-page booklet released by Rowe Methods Inc. Both types of Rowe dock equipment are illustrated and described. One is the Adjust-A-Dock which is installed in the loading

platform or at its level, to provide continuous automatic connection between the dock and the base of a truck or rail car. The other is the Adjust-A-Truck, installed at ground level to raise or lower the rear wheels of truck or trailer to maintain a continuous flush connection between the vehicle's floor and the loading platform. Photographs of both units in use and of their component parts as well as mechanical drawings and specifications are included in the folder. (Request Item No. A-34)

Homer Hercules Pulleys

Homer Hercules permanent magnetic pulley applications and features are described in the new illustrated 8-page bulletin PY-260. These pulleys automatically remove tramp iron from chemicals, coal, etc., and separate ferrous from non-ferrous materials. (Request Item No. A-35)

Industrial Rubber Products

A new 58-page case-bound general catalog on industrial rubber products manufactured by Quaker Rubber Corp., a division of H. K. Porter Co. Inc., is now available for distribution. The new catalog, fully illustrated and printed in color, is divided into sections for quick reference to a particular product or group of products. There are sections on belting, hose, packing and moulded rubber products. Each of the products mentioned in the catalog is illustrated in a cut-away section and described immediately adjacent to the photo. Performance data, specifications and sizes are included in all sections. Charts on sizes, working pressure, weights and all necessary technical information are included in the section on industrial hose and packing. Along with this valuable information on the Quaker product line, there are special sections on how Quaker belting is made, the 5 basic types of conveyor belting constructions, the 5 basic types of hose constructions and a quick index chart for hose application—how to select the right hose and how to make your hose last longer. There is also complete information on different types of hose couplings. (Request Item No. A-36)

Data On Safety Equipment

The 1955 issue of *Everything in Safety*, a catalog of personal protective equipment and industrial safety devices, has been released by the General Scientific Equipment Co. This new catalog covers miscellaneous industrial safety equipment and many unusual safety specialties. (Request Item No. A-37)

Leather Aprons And Tapes

Dimensional standards and installation instructions covering leather aprons and tapes for use on textile machinery have been developed by the textile leather division of the National Industrial Leather Association and published in a 16-page book entitled *Leather Aprons and Tapes for the Textile Industry*. The material contained in this

SERVING THE TEXTILE INDUSTRY FROM MAINE TO TEXAS

THOUSANDS OF JENKINS DYNAMICALLY BALANCED CYLINDERS and CARD SCREENS still in use after YEARS OF SERVICE

Here is convincing proof that modern machines, quality materials, and almost a half century of know-how can and does produce the precision-made products that are far more economical in the long run.

Made under the supervision of *qualified engineers*, Jenkins cylinders and cards are fully guaranteed. You are cordially invited to request complete information on why and how Jenkins' can help you produce better yarn at lower cost. Consulting us will not place you under any obligation whatsoever.

JENKINS METAL SHOPS, INC., GASTONIA, N. C.
QUALIFIED ENGINEERING

40 YEARS CONTINUOUS SERVICE TO THE TEXTILE INDUSTRY

book was assembled and approved through the joint efforts of the leading manufacturers of textile leather products. It was published to fill the need for authentic information as to the dimensions, tolerances and practices recognized as standard by the industry. (Request Item No. A-38)

All-Molded Valves And Fittings

A comprehensive, illustrated, 4-page circular describing Luncor, the first all-molded PVC valve and fittings, has been published by The Lunkenheimer Co., a pioneer in valve research and development for almost a century. The Luncor valve and fittings—designed and engineered by Lunkenheimer and molded exclusively for Lunkenheimer by Stokes Molded Products—are said to have remarkable resistance to corrosive chemical action and resist most chemicals used in industry. According to the company the exclusive molding process gives the PVC material exceptional strength, protects its natural corrosion-resistance and substantially reduces manufacturing costs.

(Request Item No. A-39)

Yale Zephyr Hand Lift Truck

The Yale Zephyr hand lift truck is pictured and described in a newly revised 4-page bulletin published by The Yale & Towne Mfg. Co. This truck, light in weight, was designed specifically for carrying loads up to 1,000 lbs. Among the features described in the bulletin is a single action, easily accessible treadle which controls the elevation of the load; a front wheel that rotates on roller bearings with double race ball bearing swivel to provide easy steering; and structural angles which are welded to the rigid deck form to provide a wider and more substantial load carrying platform. A table which provides specifications for the various model numbers is included.

(Request Item No. A-40)

Oil-Tight Push Buttons

A new bulletin describing the complete line of oil-tight push buttons, selector switches and accessories is available from the General Electric Co. The 4-color 16-page publication contains information on product features and applications, and complete ordering directions for push buttons, lights and combination units, operators, contact blocks, nameplates, stations and accessories. Designated GEA-5779B, the bulletin also contains dimensions and outlines, plus contact ratings, on all units.

(Request Item No. A-41)

Acetone

Acetone is described in a new 12-page data folder released by Carbide and Carbon Chemicals Co., a division of Union Carbide and Carbon Corp. Data are included on physical and physiological properties, specifications, constant-boiling mixtures, general solvent properties and resin solubilities. In addition, information on its performance in nitrocellulose lacquers is given and other uses are described. The bulletin also con-

tains 6 easy-to-read charts showing physical properties of interest to users of acetone. Acetone is said to be particularly important as a solvent in the textile industry. It is also used in dewaxing lubricating oils, as an absorbent for acetylene and as a chemical raw material. (Request Item No. A-42)

Stainless Steel Wall Chart

The stainless steel wall chart, printed by Alloy Metal Wire, presents the complete engineering properties of stainless steel wire, rod and strip. It is a sequel to the recently published nickel alloy wall chart. When fully opened, the stainless chart measures 17" x 22", and folds neatly into

an 8½" x 11" folder. Over 20 different stainless steel alloys in the Martensitic, Ferritic and Austenitic groups are described, and their properties listed. The chart is printed on heavy, durable paper with a dull finish to eliminate glare. The company's stainless steel wire, rod and strip are used for numerous applications.

(Request Item No. A-43)

Borotherm, Fire Resistant Chemical

A detailed informational booklet on the recently-introduced fire resistant chemical, Borotherm, has been issued by American Potash & Chemical Corp. The brochure, which includes all available information on

NON-FLUID OIL

TRADE MARK

REGISTERED

UPS TWISTING PRODUCTION

Mills using ordinary ring oils or greases on twister frames have constant trouble with blackened yarn and broken ends—so production is badly handicapped. This is because oils or greases get onto yarn and rails instead of staying on rings to eliminate friction.

Result: overstrain on yarn, because of traveler friction, hence broken ends plus "black" yarn—adds up to less production. What to do about it? Same as most other leading yarn and thread mills—change to White NON-FLUID OIL and see your twisting production go up. The reason: White NON-FLUID OILS are all lubricant which stay on rings and provide long, trouble-free lubrication. White NON-FLUID OIL is perfect for centralized twister lubrication since it leaves no residue to clog lines and fittings. Find out more. Send for Bulletin TB-16 and a free testing sample of White NON-FLUID OIL.

NEW YORK & NEW JERSEY
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Southern District Manager: Lewis W. Thompson, Jr.
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NON-FLUID OIL is not the name of a general class of lubricants, but is a specific product of our manufacture.

FOR THE MILL BOOKSHELF

the new product, has been issued as a guide for the many industries in which Borotherm may have applications as a fire resistant material. This booklet includes a listing of suggested uses in various industries and also includes information on formulations as a result of research at American Potash & Chemical Corp.

(Request Item No. A-44)

Steel Pulleys

A pictorial review of American steel pulleys, their manufacturing processes and some of their end uses, has been produced in a colorful 16-page brochure by The American Pulley Co. Graphically illustrated and briefly described in the brochure are the manufacturing techniques and personal skills required to produce precision-made steel pulleys for textile machinery.

(Request Item No. A-45)

Spur-Gear Hoist

An 8-page, 2-color bulletin describing the company's line of spur-gear hoists has been announced by Coffing Hoist Co. The bulletin includes pictures, cut-away drawings, descriptions and specifications of the

entire YC and YCT lines, making a total of 62 different sizes and models with capacities from 1/4 to 25 tons. In addition to standard single and multiple-chain units, models for specialized applications are shown. Among these are Army type, Low Headroom, Clevis-Connected and Extended Handwheel hoists. Various types of trolleys, both plain and geared, are also offered.

(Request Item No. A-46)

Plastisols

A new data sheet on plastisols, liquid vinyl plastics, has been published by The B. F. Goodrich Industrial Products Division, Akron, Ohio, and is available without charge. The plastisols are described as completely compounded, ready-to-use materials. They can be made into finished products by dip-coating, spread-coating, casting, slush molding and other processes. The data sheet outlines typical methods of manufacture for glove coating, spread coating for fabrics and spray-coating on fabrics.

(Request Item No. A-47)

Study Of Spindle Bumper Straps

A *Stroboscopic Study of Spindle Bumper Straps* by Dr. Albert E. Chouinard, professor and head of the department of leather engineering at Lowell (Mass.) Technological Institute, has been published by the in-

stitute as one of its quarterly publications. Sponsors of the project were the textile leather division of the National Industrial Leather Association. Results of the study made by Dr. Chouinard are of interest to anyone concerned with the operation of a drop box loom, usually referred to as a Crompton & Knowles loom. The writer obtained the bachelor of science and master of science degrees in chemistry at the College of the Holy Cross and the Ph.D. degree in chemistry at Clark University. He did research work at B. F. Goodrich Co. in Worcester, Mass., and at F. W. Bersworth Laboratories of Framingham, Mass. Prior to joining the L.T.I. faculty to head the leather department, he was employed by Graton & Knight Co. of Worcester, tanners of industrial leathers. (Request Item No. A-48)

The Story Of Diamond Chemicals

A 16-page brochure depicting the contributions of Diamond Chemicals to America's way of life and standard of living has been issued by Diamond Alkali Co. Entitled *15 Portraits in Print of Diamond Chemicals and Their Contributions to Everyone's Progress*, this booklet is a collection of 15 selected full-page, 4-color advertisements published by the company in 2 national weekly news magazines during the past few years. Interpreted in words and pictures are 15 of the diverse ways in which Diamond, as a major producer of basic chemicals for industry, is helping to build an increasingly better America through creative chemistry and its many applications in many industries.

(Request Item No. A-49)

Packaging Machinery Directory

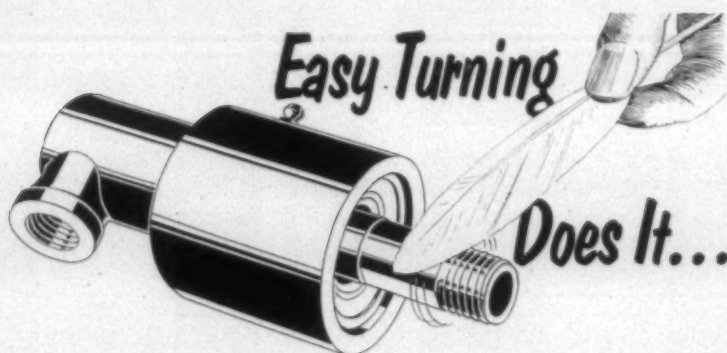
The Packaging Machinery Manufacturers Institute announces the publication of a new directory covering makers of all types of packaging machinery. It is designed as a ready reference for purchasing agents, factory superintendents and others who may be interested in this type of equipment. The directory is leather covered and in loose-leaf form so that it can be kept up-to-date as new information is issued. It is divided into 3 sections for easy reference. One section lists the trade names of equipment and names of the manufacturers. Another section lists the kind of equipment available and names of the manufacturers. A third section, alphabetically arranged, gives names and addresses of the machinery makers and complete information on the machines each one makes. The directory sells for \$10 and can be obtained by writing the Packaging Machinery Manufacturers Institute, 342 Madison Avenue, New York 17, N. Y.

(Request Item No. A-50)

Estimating Printing Costs

Regina Services Corp. has announced the release of a booklet entitled *Your Printing Costs Are As Follows*. . . . The booklet, as pointed out by Regina, is designed primarily to enable the busy executive to estimate for himself the cost of his contemplated printing matter.

(Request Item No. A-51)



Keeps Anco Rotary Joints Running Far Longer

ANCO engineering achieves easy turning plus perfect sealing. In the Anco joint, a piston shaped like this at the sealing point is

pressed against the slippery Rulon seal with just enough pressure (automatically adjusted by line pressure) to ensure perfect sealing. Only line contact is achieved like this

. . . note the extremely small contact area. Troublefree service for exceptionally long operating periods results in minimum maintenance. Genuinely leakproof, hot or cold. Write us for a sample of Rulon (Dixon's patented bearing material) and see for yourself how easily metal slides on it. With your sample we will send complete engineering data on the Anco Rotary Joint. No obligation.

ANCO DIVISION AMERICAN ASSOCIATES, INC.

Selling Agent for
Southern Textile Mills

One Baker Street, Providence 5, R. I.

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121 Welborn Street, Greenville, S. C.

Serving The Textile Industry

Bronze Powder Supplier Marks 131st Anniversary

George Benda Inc., manufacturer of Benda custom quality bronze powders, is currently marking its 131st year of continued operation and its 53rd in this country. Founded in 1824 at Nuremberg, Germany, the company was moved to this country in 1902 and its plant and offices were established at their present location in Boonton, N. J. The company produces its special bronze powders for textile printers and other industries.

Southern Gear Works Opens At Gastonia, N. C.

A new gear manufacturing plant, Southern Gear Works Inc., has been established in Gastonia, N. C., for the manufacture of virtually any type of gear for commercial or industrial use. Fred Farrar, president and treasurer of the new corporation, reports that the firm is one of the most modernly equipped gear manufacturing plants in the South. He points out that the management of the corporation has more than 50 years



Fred Farrar

experience in engineering, designing and manufacturing gears. The firm will include in its production spur gears, worm and worm gears, spiral or helical gears, bevel gears and pinions, roller and silent chain sprockets, slub yarn attachments, ratchets and studs from all types of materials. Other officers of the firm include Garland Propst and George B. Mason, vice-presidents; and J. E. Noblett, secretary and assistant treasurer.

Pittsburgh Plate Glass Opens New Research Lab

Pittsburgh Plate Glass Co. has announced the formal opening of its paint and brush division's new, ultra-modern basic and applied research laboratories at Springdale, Pa. Containing approximately 68,000 sq. ft. of floor space, the laboratory is completely air-conditioned. Headed by Dr. Howard Gerhart, the laboratory currently has a staff of 85 chemists, engineers and assistants. This staff will be gradually increased, it is pointed out.

Gabb Names Southern Agent For New Shear-Flow Mixer

Philip H. Slaughter of Atlanta, Ga., has been named manufacturers' representative for the industrial mixer division of Gabb Special Products, Windsor Locks, Conn.

Mr. Slaughter will offer the company's Shear-Flow portable type mixer, designed to mix liquids and pastes, in Virginia, Tennessee, Arkansas and all states south. Gabb Special Products is a division of The E. Horton & Son Co.

Naugatuck To Construct Plant In Gastonia, N. C.

Naugatuck Chemicals Division of U. S. Rubber Co. has announced that it will build a plant in Gastonia, N. C., for the production of compounds used in synthetic rubber and plastics. The plant, which will be located on a 10-acre site near U. S. Rubber's textile division plant in Gastonia, will contain some 40,000 sq. ft. of floor space and will employ 30 to 40 persons. The new plant was at one time tentatively scheduled for a Charlotte, N. C., site.

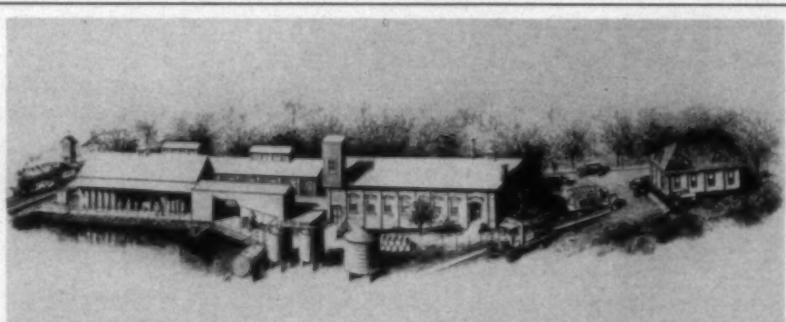
Yale LP Trucks Receive Underwriters' Approval

The Yale & Towne Mfg. Co., Philadelphia, Pa., has announced that its LP gas or propane powered industrial lift trucks from 3,000 to 10,000 lbs. capacity has been approved by the Underwriters' Laboratories.

Covered in the approval is the installation of either A.S.M.E. or I.C.C. containers. Fuel for truck operation is provided for in 1 of 2 ways. The first way is through a bottle arrangement which makes possible quick and easy refueling by substituting another bottle. With the second method, fuel is supplied by a tank which is a permanent part of the truck and is refilled from a storage source. This, the company points out, lends itself particularly well to those installations where bulk storage is available on the premises.

Atlas Transfers Hystrene Marketing To The HumKo Co.

Atlas Powder Co., Wilmington, Del., has announced that, effective Feb. 1, the marketing of Hystrene fatty acids will be transferred to the HumKo Co., Memphis, Tenn. Atlas for the past 5 years has been sole sales agent for the Hystrene line, which is manufactured by HumKo's Trendex Division. Atlas also announced that George W. Collins, in charge of Hystrene sales at Atlas, will join the HumKo staff to head up the fatty acid sales program. Atlas and HumKo will continue their close relations, according to a company spokesman. Atlas



ROYCE CHEMICAL CO. of Carlton Hill, N. J., manufacturer of chemicals for the textile industry, is celebrating the completion of 25 years of service. *Top photo shows the original Royce plant; bottom photo is that of the plant as it looks today.* Sharing the anniversary are five employees who have been with the company since its founding in 1929. Each recently received inscribed gold watches in recognition of their pioneer service with the firm.

SERVING THE TEXTILE INDUSTRY—

presently is completing an emulsifier plant adjacent to the HumKo plant in Memphis and agreements have been made whereby HumKo will supply raw materials for this Atlas operation and in turn will be one of the new plant's major customers.

General Securities Firm Opened At Durham, N. C.

J. Harper Erwin Jr., who has been identified with the textile and securities business

since 1921, has formed his own firm, Erwin & Co., general securities, at Durham, N. C. Mr. Erwin helped organize Randolph Mills, Franklinville, N. C., in 1923, and is still a director of that company. In 1933 he joined Courts & Co. when that firm established its first branch office in Durham.

Firm Chartered To Deal In Textile Polishing Powder

Campbell & Rheuark Lab and Textile Supplies Inc., Cramerton, N. C., has been chartered by the state of North Carolina to deal in electrolyte brand textile polishing

powder, varnish and varnish remover. The firm was capitalized at \$100,000. Forrest J. Campbell is president and general manager of the firm. He was formerly with Burlington Mills Corp. as general supervisor of carding. Other officers are J. C. Rheuark, Lincolnton, N. C., vice-president and assistant manager, and Mrs. Pauline M. Campbell, secretary and treasurer.

Coleman Representing Turner & Chapman

The new partnership, Turner & Chapman, Griffin, Ga., and Fort Mill, S. C., which, as noted, recently acquired MacMillan Co., will be represented by the Coleman Co., Greenville, S. C., rather than the Cole Co. as announced earlier. The firm specializes in laminated hardwood loom beam barrels, built-up wood rolls and also offers a complete rebuilding and balancing service on warper beams. Other representatives include H. B. (Booch) Askew in Georgia, Alabama and Tennessee; and R. H. MacMillan, Fort Mill, S. C., in the Carolinas.

Frankl Named Agent For German High Draft Frame

Ernest L. Frankl Associates, New York City, has been appointed U. S. representative for a high draft spinning frame which spins directly from drawing frame sliver. The unit is manufactured by Josef Pfenningsberg & Co., M. Gladbach, Germany, manufacturer of cotton spinning, twisting and synthetic processing machinery. According to Frankl, this system, which has been in operation in Europe for 4 years, will process up to very fine counts (100s and above). Several trial installations have been sold during the last few weeks to manufacturers in this country, Frankl reports.

Cotton Buying & Receiving Firm Opens At Charlotte

A new firm for buying and receiving cotton for mill accounts has been formed in Charlotte, N. C. Maury A. Johnston, formerly vice-president and manager of the Charlotte office of Crespi Cotton Co., has established M. A. Johnston & Co. at 411½ South Tryon Street. Mr. Johnston will continue to represent Crespi in the Charlotte area, it is said.

U. S. Rubber Contracts For Synthetic Rubber Plants

United States Rubber Co. has contracted to purchase from the government the synthetic rubber plant and a chemical plant manufacturing DDM, an important raw material for synthetic rubber, both located in Naugatuck, Conn. In addition, the Texas-U. S. Chemical Co., a newly-created company owned jointly by U. S. Rubber and The Texas Co., contracted to purchase the synthetic rubber plant now operated by U. S. Rubber in Port Neches, Tex., and also ½ the butadiene plant located there. The contracts are final and binding on the part of the rubber company, Texas-U. S. Chemical Co. and the Rubber Producing Facilities

TO

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Having received letters patent from the United States, for certain improvements for the manufacturing of Mule Drum Grooves, and the application of those Grooves to the tops of Card and Drawing Cans, respectfully solicits the attention of Cotton Spinners and those concerned.
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Butterworth, founder of the firm
known currently
as H. Butterworth
& Sons Co. During
the following
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his works to another location in
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advertisement reproduced below.
The H. Butterworth manufacturing plant and
headquarters now are at Bethayers, Pa. It currently specializes in wet finishing
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Sulfonated oils for finishing, softening, throwing, sizing, and emulsifying.

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SERVING THE TEXTILE INDUSTRY—

Disposal Commission. Under the terms of the Rubber Producing Facilities Disposal Act of 1953, only a Congressional veto of the government disposal program could prevent the sale from taking place. The disposal program which covers 27 plants manufacturing both synthetic rubber and its raw materials, will be submitted to the Senate and the House of Representatives not later than Jan. 31. If no action is taken by Congress within 60 days, the sale of the plants is automatically approved.

Reichhold To Concentrate Operations Under One Roof

Reichhold Chemicals Inc., White Plains, N. Y., has announced that it has taken over the entire building at 525 North Broadway as its executive headquarters. For the past few months the firm has occupied only the second floor of the building while the street floor was occupied by the executive offices of Alexander Smith Inc., carpet manufacturer. The carpet firm is transferring its operations to its sales office in New York City and to its plant in Greenville, Miss., permitting Reichhold to concentrate all of its administrative, sales, foreign and export departments under one roof.

Neckties For Customers

Officials and operating executives of mills that are their customers are being presented attractive neckties by Greensboro (N. C.) Loom Reed Co. as a token of the company's appreciation of their business. Each tie carries a label reading, "Tie and label woven with Greensboro loom reeds especially for the friends of Greensboro Loom Reed Co." The gift list numbers approximately 1,000, according to George A. McFetters, Greensboro president.

Production To Be Tripled At Courtaulds (Ala.) Plant

Courtaulds (Ala.) Inc. will triple the present productive capacity of its rayon staple plant at LeMoyne, Ala., by September,


the company announces. This increase will bring productive capacity to 150 million lbs. a year, the plant having been originally designed to produce 50 million lbs. of viscose rayon staple annually. This is the second announcement of an increase in production by Courtaulds this year. Early last October, the company revealed plans for doubling the capacity of its LeMoyne plant by Spring, bringing it to 100 million lbs. a year. At that time it was stated that plans for tripling the capacity also had been approved, but that final decision on putting such plans into operation would be made within a few months. Courtaulds' Alabama plant was completed only in 1953, but since last Spring the present capacity has been inadequate to satisfy demand, the company said. Since August 1953, Courtaulds also has been producing Coloray, its solution-dyed rayon staple, at the LeMoyne plant.

Bristol Engineers Expand, Move Into New Quarters

The application engineering department of The Bristol Co., Waterbury, Conn., has moved into a new office building addition recently completed. The new facilities will enable the company to broaden the scope of its work in developing new and better methods of applying automatic controlling, recording and telemetering instruments to customers' needs.

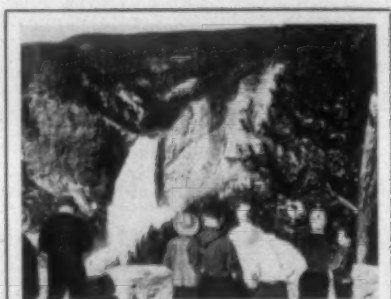
C. R. Daniels Enlarges Weldon, N. C., Plant

C. R. Daniels Inc., Daniels, Md., one of the world's largest manufacturers of diversified canvas products, has greatly increased the production scope in its Maryland and North Carolina plants. The Weldon, N. C., mill has been expanded to almost double its previous capacity in order to enable this operation to handle all of Daniels spinning and weaving requirements. Previously, large areas of floor space at the Daniels, Md., plant were occupied by machinery for spinning, twisting and weaving specialized ducks used in making stitched canvas conveyor belting, tarpaulins, salvage covers, deck cloth, canvas baskets and trucks, as well as the other items in the Daniels' line



SCOTT TESTERS (SOUTHERN) INC.

SCOTT TESTERS (SOUTHERN) INC. will move into this new building, illustrated by sketch, when it is completed next month in Spartanburg, S. C. The firm has been operating in the Spartanburg area the past two years as Southern repair and service center for the equipment manufactured by Scott Testers Inc., Providence, R. I. John E. Hargreaves is general manager of the Spartanburg operation.



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A Salute to the National Parks Association

The National Parks Association is a non-profit organization dedicated to the preservation of the natural and cultural resources of the United States. It is a leading force in the conservation movement, and its efforts are essential to the protection of our national heritage.

SINCLAIR

Let's Save the Old

SINCLAIR OIL CORP. in 1955 will sponsor a public relations advertising program built around the conservation of national parks. Each advertisement in the advertising series will feature a scenic picture of a park and pay tribute to some national conservation group. Among the groups to be honored in the series are the National Parks Association, National Wild Life Federation, Audubon Society, National Grange, the National Park Service itself and others. Each ad will read "A Sinclair conservation message to encourage Americans to see—and save—their national parks." The commercial consists of an offer of tour bureau service in planning auto trips to the parks.

of industrial products. Demand for these various products is said to have increased so heavily that the company found itself forced to utilize all its Daniels, Md., factory floor space for the manufacture of such products, thus necessitating moving of all weaving machinery to Weldon. To further assist in meeting demands, the Dallas, Tex., plant will likewise concentrate solely on producing the varied line of diversified items, using as basic part of the process the vastly augmented output of the newly added looms at the Weldon plant.

Clinton, National Merger Negotiations Discontinued

Frank Greenwall, president of National Starch Products Inc., and Richard Moss, chairman of the board, Clinton Foods Inc., have announced in a joint statement that negotiations for the merger of the Corn Processing Division of Clinton Foods with National Starch Products have been discontinued.

Equipto Inaugurates Free Layout Service

Equipto Division of Aurora Equipment Co., for 45 years a leading supplier of steel shelving, parts bins, steel benches, trucks, drawer units and lockers, is now offering the free services of factory trained engineers

who are specialists in stockroom layouts. This highly trained staff spends all of its time in the study and survey of storage facilities. In addition to recommendations on steel shelving, such factors as location of stockroom, receiving and shipping areas, parts finding and stock control systems, and lighting are carefully analyzed and discussed fully. The service is available to anyone planning to build, modify or expand storage facilities. It is a guarantee of an efficient parts department. The proper equipment, carefully laid out, usually involves less original cost than an inefficient installation, and very often there is a saving in floor space as well. In addition to this service, Equipto has also printed a simplified booklet entitled *How to Solve Your Storage Problems*, which tells the reader how to set up his own facilities, make surveys, elevation drawings and floor plans. This is said to be ideal for smaller layouts where the services of layout specialists are not required.

Rapistan-Keystone Appoints Distributors

Distributors and representatives for Rapistan power and gravity conveying equipment in all areas of the U. S. have also been appointed to sell and service the Rapistan-Keystone line of overhead trolley conveyers. The trolley conveyor is manufactured by Rapistan-Keystone Inc. in Detroit, Mich. The new appointments are designed to provide improved service for customers

by making available through established outlets the line of flexible, low-cost overhead trolley conveyors. Rapistan-Keystone models are designed for medium duty use, feature factory prefabricating and matchmarking to speed up and simplify installation without special crews.

Wrenn Brothers' Hyster Territory Is Expanded

Territory covered by Wrenn Brothers, Hyster Co. dealer in the Southeast, has been enlarged by the materials handling equipment manufacturer to include the entire state of Georgia, according to Wrenn Brothers' president, J. Preston Wrenn. Wrenn Brothers' territory will now comprise Georgia and South Carolina, Chambers County in Alabama and that portion of North Carolina south of and including the following counties: Cherokee, Graham, Swain, Haywood, Madison, Yancey, Mitchell, Avery, Watauga, Ashe, Alleghany, Surry, Stokes, Rockingham, Caswell, Person, Durham, Wake, Johnston, Wayne, Lenoir, Craven and Pamlico. Wrenn Brothers will offer service and sales facilities to the area for the extensive Hyster line of mobile cranes, platform trucks and fork lift trucks including the recently announced heavy-duty Hyster 15,000-lb. capacity Model RC-150. Headquarters for the Hyster dealer is at 4701 Pineville Road, Charlotte, N. C., with branches at 130 Boulevard, N.E., Atlanta, Ga., and 910 Laurens Road, Greenville, S. C.

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textile bulletin

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TEXTILE BULLETIN is devoted to the dissemination of information and the exchange of opinion relative to the spinning and weaving phases of the textile industry, as well as the dyeing and finishing of yarns and woven fabrics. Appropriate material, technical and otherwise, is solicited and paid for at regular rates. Opinions expressed by contributors are theirs and not necessarily those of the editors and publishers. ¶ Circulation rates are: one year payable in advance, \$1.50; three years payable in advance, \$3.00;

Somebody Is Getting Bad Advice

It seems that the situation of tariff, as far as the textile industry is concerned, can only be described as grim. Activity by the Eisenhower Administration as 1954 drew to a close and as 1955 began made it clear the Administration's determination would press its tariff-cutting program despite pleas from representatives of American producers and labor that an increased flow of low-wage imports would jeopardize their industries and localities.

The textile industry has sent its most competent representatives to testify at hearings held by the United States Tariff Commission and the Committee for Reciprocity Information. They have made good cases, and have laid—not figuratively speaking—the swatches on the table. They have shown that Japan's wage rate advantage of one-tenth the hourly rate of the United States and one-third that of Great Britain has resulted in a phenomenal post-war recovery of Japanese textiles. Textile exports from Japan have grown to such a point that in 1954 they equaled the combined export figures of the United States and United Kingdom. American exports have receded under Japanese competition. Our industry's spokesmen have faced up to the necessity of strengthening Japan's economy, but have pointed out that Japan's problem and the entire world trade problem cannot be separated. To quote from one blunt statement, "In order to achieve competitive equality with Japan, U. S. textile tariffs would have to be fantastically high. But the Administration program calls for additional concessions. We should like to show how much more the industries of the United States will be called on to give. The United States has long since set the example in granting trade concessions. Textile tariffs have been reduced progressively for two decades. The American textile industry has seen its export trade decline a full two-thirds since 1947—our reward as the most generous nation in granting tariff reduc-

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one year, Canada, \$3.00; one year, other countries in Postal Union, \$5.00; single copies, 25 cents. ¶ A companion monthly journal, THE KNITTER, is published by Clark Publishing Co. and devoted to the interests of the knitgoods manufacturing industry.

tions. In contrast, most foreign countries have increased their trade barriers. We urge that the Administration and Congress strive first to eliminate the numerous controls and cartel operations of foreign countries which are far more restrictive of commerce than what is left of the American tariff. We seek a policy which will stimulate the flow of goods to destitute areas where they are needed instead of inviting the producer nations to dump their surpluses in the U. S. market. We ask for a policy which will export American goods, not American jobs."

Meanwhile, the White House is sending its "big guns" to the various hearings—Weeks, Wilson, Mitchell, etc.—to urge that Congress renew the Trade Agreements Act and grant the President additional authority to cut tariffs up to 15 per cent during that period. Apparently the President is getting some bad advice, if you are to express it in a kindly fashion. Then too, the textile industry seems to have acquired a questionable degree of special consideration in being placed on the list of "expendable" industries in respect to tariff negotiations. The White House, in its fervor to sponsor Japanese participation in the General Agreement on Tariffs and Trade, seems prepared to send emissaries to Geneva next month who will, in effect, say: "Here is *our* textile industry; you other fellows take it and do with it what you will."

The time has come to be frankly and honestly selfish. Selfish to the point of saying that the jobs of 1¼ million textile workers in the United States are being jeopardized. Selfish to the point of asking just how Japan could ship textiles to this country if and when there is another war and our domestic industry is not equipped to supply our own military textile needs.

If you are willing to assume that the Administration has made its stand on tariffs and will not be moved, the only recourse is Congress. To be elementary about it, each textile mill is located in a federal congressional district and in a state. Each district has a Congressman in the House of

EDITORIAL

Representatives, and each state has two Senators. They get elected by votes. They need to be alerted specifically to the thinking of the textile industry on tariff reductions.

It isn't too late for each mill to advise its employees, by any practical means of communication, just what is facing them and urge them to exercise their responsibility and express themselves to their representatives in Washington. This country is still a democracy; votes count.

TEXTILE INDUSTRY SCHEDULE

— 1955 —

- Jan. 24-27 (M-Th)—**PLANT MAINTENANCE & ENGINEERING SHOW**, International Amphitheatre, and **CONFERENCE**, Conrad Hilton Hotel, Chicago, Ill.
- *Jan. 24-27 (M-Th)—General management conference, **A.M.A.**, Hotel Statler, Los Angeles, Cal.
- Jan. 24-28 (M-F)—**INTERNATIONAL HEATING AND VENTILATING EXPOSITION** (sponsored by American Society of Heating and Ventilating Engineers), Commercial Museum, Philadelphia, Pa.
- Jan. 27-29 (Th-Sa)—Annual meeting, **TEXTILE DIV., AMERICAN SOCIETY FOR QUALITY CONTROL**, Clemson (S. C.) College.
- *Jan. 29 (Sa)—**PIEDMONT SEC., A.A.T.C.C.**, Hotel Poinsett, Greenville, S. C.
- Jan. 31-Feb. 1 (M-Tu)—Annual meeting, **NATIONAL COTTON COUNCIL OF AMERICA**, Hotel Shamrock, Houston, Tex.
- *Jan. 31-Feb. 4 (M-F)—Committee week, **A.S.T.M.**, Netherland Plaza Hotel, Cincinnati, Ohio.
- Feb. 4 (F)—Annual banquet, **PHILADELPHIA TEXTILE INSTITUTE ALUMNI ASSN.**, Warwick Hotel, Philadelphia, Pa.
- *Feb. 7-9 (M-W)—Marketing conference, **A.M.A.**, Hotel Statler, New York City.
- Feb. 11 (F)—**WASHINGTON SEC., A.A.T.C.C.**, Washington, D. C.
- *Feb. 12 (Sa)—**SOUTHEASTERN SEC., A.A.T.C.C.**, Alabama Power Co. auditorium, Talladega, Ala.
- *Feb. 14-16 (M-W)—Personnel conference, **A.M.A.**, Palmer House, Chicago, Ill.
- *Feb. 15 (Tu)—**TEAM (Textile Education and Machinery) DAY** (sponsored by American Textile Machinery Assn.), School of Textiles, N. C. State College, Raleigh.
- *Feb. 16 (W)—Area meetings, **A.C.M.I.**, Greenville and Spartanburg, S. C.
- Feb. 16-18 (W-F)—**COTTON RESEARCH CLINIC** (sponsored by National Cotton Council of America), The Carolina, Pinehurst, N. C.
- *Feb. 17 (Th)—Area meetings, **A.C.M.I.**, Charlotte and Gastonia, N. C.
- *Feb. 18 (F)—Area meeting, **A.C.M.I.**, Greensboro, N. C.
- *Feb. 25-26 (F-Sa)—Tax workshop, **A.C.M.I.**, Hotel Barringer, Charlotte, N. C.
- *Mar. 2-4 (W-F)—Cotton producer mill tour, **A.C.M.I.**, Charlotte, N. C.
- Mar. 10-11 (Th-F)—Annual meeting, **TEXTILE RESEARCH INSTITUTE**, Hotel Commodore, New York City.
- *Mar. 15-18 (Tu-F)—**COMMITTEE D-13 ON TEXTILE MATERIALS, A.S.T.M.**, Hotel Statler, New York City.
- *Mar. 17-18 (Th-F)—**SOUTHERN TEXTILE METHODS AND STANDARDS ASSN.**, Clemson House, Clemson, S. C.
- *Mar. 31-Apr. 1 (Th-F)—**SOUTHERN MUNICIPAL AND INDUSTRIAL WASTE CONFERENCE**, College of Engineering, Duke University, Durham, N. C.
- Mar. 31-Apr. 2 (Th-Sa)—Annual meeting, **A.C.M.I.**, Palm Beach (Fla.) Biltmore Hotel.
- *Apr. 2 (Sa)—**EASTERN CAROLINA DIV., S.T.A.**, North Carolina State College School of Textiles, Raleigh.
- *Apr. 13-15 (W-F)—Annual meeting, **AMERICAN SOCIETY OF LUBRICATION ENGINEERS**, Hotel Sherman, Chicago, Ill.
- Apr. 13-15 (W-F)—Annual convention, **ALABAMA COTTON MFERS. ASSN.**, Buena Vista Hotel, Biloxi, Miss.
- †Apr. 14-16 (Th-Sa)—Annual convention, **PHI PSI TEXTILE FRATERNITY**, Beaconsfield Hotel, Brookline, Mass.
- †Apr. 16 (Sa)—**NORTHERN NORTH CAROLINA-VIRGINIA DIV., S.T.A.**
- *Apr. 18-20 (M-W)—Packaging conference, **A.M.A.**, Palmer House, Chicago, Ill.
- *Apr. 18-21 (M-Th)—**NATIONAL PACKAGING EXPOSITION** (sponsored by American Management Assn.), International Amphitheatre, Chicago, Ill.
- *Apr. 21 (Th, p. m.)—**SOUTH CAROLINA DIV., S.T.A.** (Riegel Textile Corp. as host), Ware Shoals.
- *Apr. 23 (Sa)—**SOUTHEASTERN SEC., A.A.T.C.C.**, American Legion Club, Lindale, Ga.
- Apr. 27-29 (W-F)—Annual convention, **COTTON MFERS. ASSN. OF GEORGIA**, Boca Raton (Fla.) Hotel and Club.
- Apr. 29-30 (F-Sa)—Annual convention, **DELTA KAPPA PHI Textile Fraternity**, Lowell (Mass.) Technological Institute.

*Listed for the first time this month.

†Tentative listing.

‡Changed or corrected from previous issue.

(M) Monday; (Tu) Tuesday; (W) Wednesday; (Th) Thursday; (F) Friday; (Sa) Saturday; (Su) Sunday

- *Apr. 30 (Sa)—**PIEDMONT SEC., A.A.T.C.C.**, Hotel Robert E. Lee, Winston-Salem, N. C.
- May 4-5 (W-Th)—Spring meeting, **THE FIBER SOCIETY**, School of Textile Technology, Alabama Polytechnic Institute, Auburn.
- *May 4-6 (W-F)—Insurance conference, **A.M.A.**, Hotel Statler, New York City.
- †May 7 (Sa)—**PIEDMONT DIV., S.T.A.**
- May 9-14 (M-Sa)—**NATIONAL COTTON WEEK** (sponsored by National Cotton Council of America).
- May 12-14 (Th-Sa)—Annual outing, **CAROLINA YARN ASSN.**, The Carolina, Pinehurst, N. C.
- May 16-20 (M-F)—**MATERIALS HANDLING EXPOSITION**, International Amphitheatre, Chicago, Ill.
- May 18-20 (W-F)—**NORTH CAROLINA INDUSTRIAL SAFETY CONFERENCE**, Hotel Robert E. Lee, Winston-Salem.
- †May 20 (F)—**WASHINGTON SEC., A.A.T.C.C.**
- *May 23-25 (M-W)—General management conference, **AMERICAN MANAGEMENT ASSN.**, Hotel Roosevelt, New York City.
- May 26-28 (Th-Sa)—Annual convention, **SOUTH CAROLINA TEXTILE MFERS. ASSN.**, The Cloister, Sea Island, Ga.
- May 31-June 3 (Tu-F)—**BASIC MATERIALS EXPOSITION**, Convention Hall, Philadelphia, Pa.
- *June 3-4 (F-Sa)—Annual outing, **SOUTHEASTERN SEC., A.A.T.C.C.**, Radium Springs, Albany, Ga.
- June 10-12 (F-Su)—Annual outing, **PIEDMONT SEC., A.A.T.C.C.**, Mayview Manor, Blowing Rock, N. C.
- June 16-18 (Th-Sa)—Annual convention, **S.T.A.**, Mayview Manor and Green Park Hotel, Blowing Rock, N. C.
- June 25-July 10 (Sa-Su)—**INTERNATIONAL TEXTILE EXHIBITION**, Brussels, Belgium.
- *June 26-July 1 (Su-F)—Annual meeting, **AMERICAN SOCIETY FOR TESTING MATERIALS**, Chalfonte-Haddon Hall, Atlantic City, N. J.
- Sept. 6-17 (Tu-Sa)—**PRODUCTION ENGINEERING SHOW**, Navy Pier, Chicago, Ill.
- Sept. 8-9 (Th-F)—Fall meeting, **THE FIBER SOCIETY**, Massachusetts Institute of Technology, Cambridge.
- *Sept. 10 (Sa)—**SOUTHEASTERN SEC., A.A.T.C.C.**, Ralston Hotel, Columbus, Ga.
- Sept. 16-17 (F-Sa)—Annual meeting, **COMBED YARN SPINNERS ASSN.**, The Homestead, Hot Springs, Va.
- *Sept. 20-21 (Tu-W)—**CHEMICAL FINISHING CONFERENCE** (sponsored by National Cotton Council of America), Chalfonte-Haddon Hall, Atlantic City, N. J.
- Sept. 22-25 (Th-Su)—National convention, **A.A.T.C.C.**, Chalfonte-Haddon Hall, Atlantic City, N. J.
- Oct. 13-14 (Th-F)—Annual meeting, **NORTH CAROLINA TEXTILE MFERS. ASSN.**, The Carolina, Pinehurst, N. C.
- *Oct. 27-28 (Th-F)—Annual convention, **THE QUARTERMASTER ASSN.**, Conrad Hilton Hotel, Chicago, Ill.
- *Oct. 29 (Sa)—**PIEDMONT SEC., A.A.T.C.C.**, Hotel Barringer, Charlotte, N. C.
- *Nov. 10-11 (Th-F)—Annual meeting, **CARDED YARN ASSN.**, Bon Air Hotel, Augusta, Ga.
- *Dec. 3 (Sa)—Annual business meeting, **SOUTHEASTERN SEC., A.A.T.C.C.**, Biltmore Hotel, Atlanta, Ga.

— 1956 —

- Apr. 5-7 (Th-Sa)—Annual meeting, **AMERICAN COTTON MFERS. INSTITUTE**, Hollywood Beach Hotel, Hollywood, Fla.
- †June 14-16 (Th-Sa)—Annual convention, **SOUTHERN TEXTILE ASSN.**, Ocean Forest Hotel, Myrtle Beach, S. C.
- Sept. 10-12 (M-W)—National convention, **A.A.T.C.C.**, Waldorf-Astoria Hotel, New York City.
- Sept. 10-15 (M-Sa)—**PERKIN CENTENNIAL** (sponsored by various professional societies and trade associations), Waldorf-Astoria Hotel, New York City.

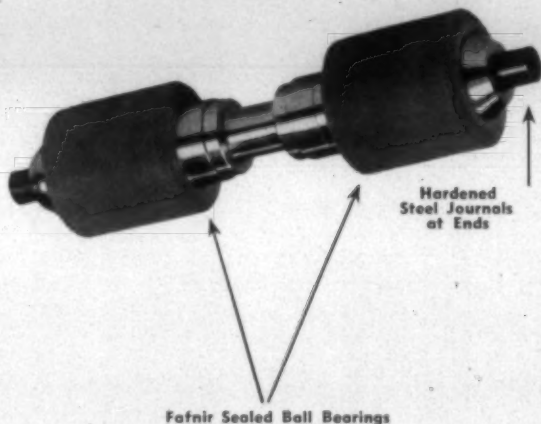
— 1957 —

- †Fall—National convention, **AMERICAN ASSN. OF TEXTILE CHEMISTS AND COLORISTS**, Boston, Mass.

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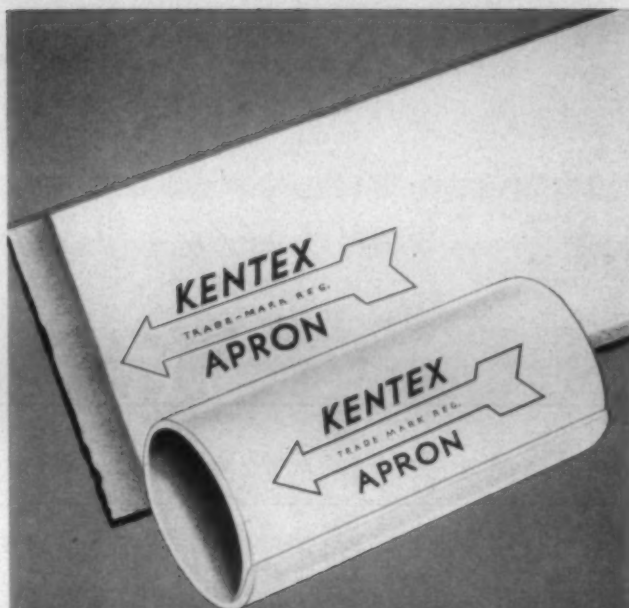
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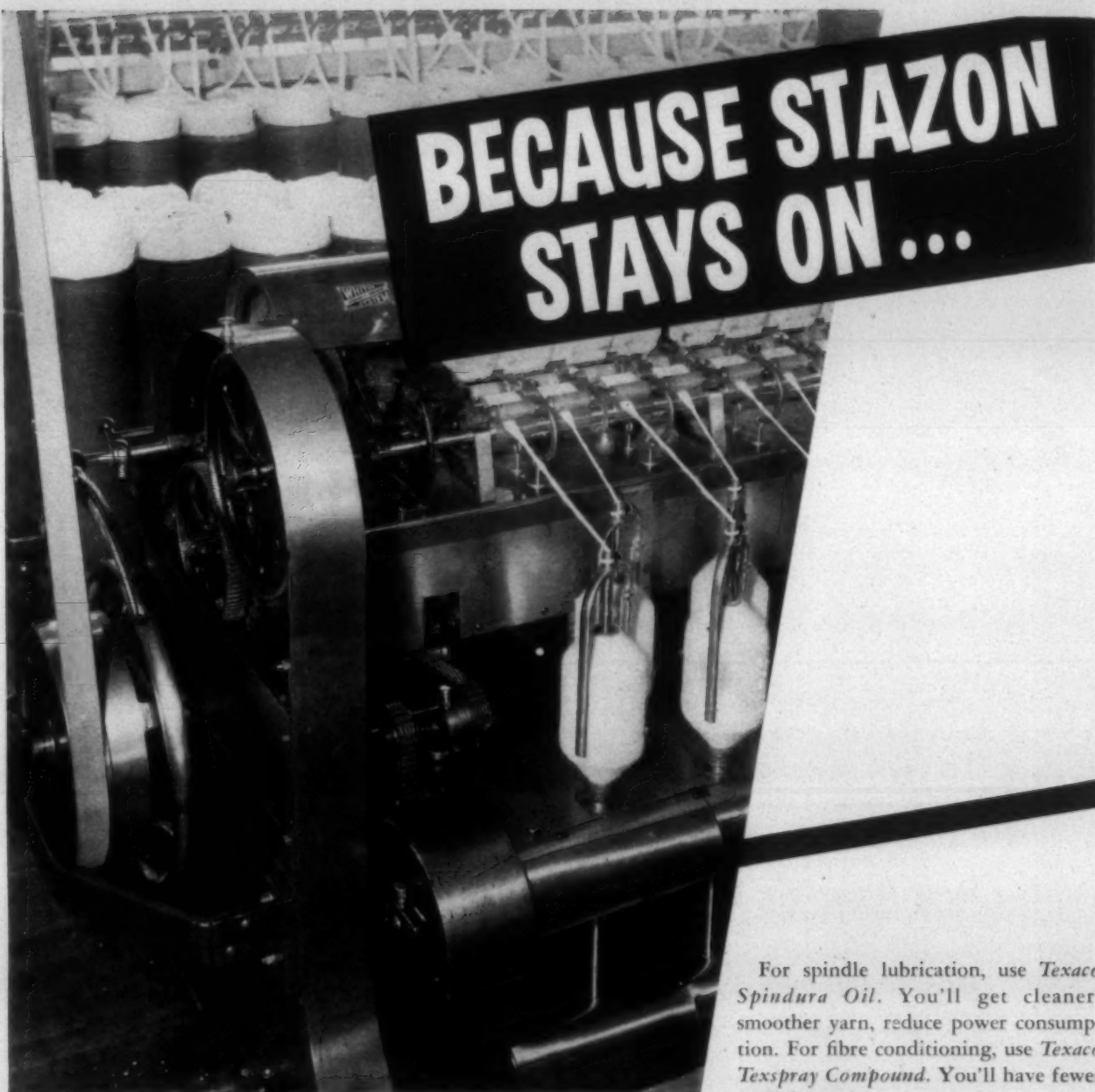


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Research Achievements In 1954

By J. B. GOLDBERG, Chemical Engineer



Mr. Goldberg makes an appearance every January before the American Association for Textile Technology in New York City, bringing those present up to date on the industry's record of the past year. His paper is abstracted herewith.

ALTHOUGH we have witnessed a generally unsatisfactory year for profit-making by the textile industry, there has been no lack of activity or dearth of accomplishments in the field of research. The never-ending quest for means of providing something new, something better or something cheaper continues to receive support even under unfavorable business conditions. A prosperous period is usually accompanied by a loosening of the purse strings, while days of shrinking profits bring the realization or nurture the hope that research may be the long sought-for panacea. The following review of many of the more publicized research achievements confirms the fact that our industry is still very much alive and, naturally, still kicking.

Man-Made Fibers

Following the trend for increasing use of "solution" or "spun-dyed" fibers and yarns, the American Bemberg Corp. introduced this type of yarn in a limited number of colors last January. Offered in experimental lots prior to 1954, it was only during the past year that this company also made available commercial quantities of a wide range of thick-and-thin nubby, slubby and flake yarns in white and colors. Naming one variety "measle" yarn might have been planned with the hope that it would be contagious and spread throughout the industry. First offered by Du Pont in 1953, last year several other viscose yarn manufacturers marketed higher strength yarn for tire cord at a slight price premium. Du Pont's Type C acetate which develops a wool-like crimp when immersed in boiling water was described in a bulletin issued in April. The yarn must be used in woven or knitted fabrics with a cut pile or high loop construction and suggested applications include jacket and boot linings, coats and paint roll covers. The Celanese Corp. created a heavy denier "high volume" yarn, of particular interest in drapery and upholstery fabrics, while their Celanorm solution-dyed yarns, now made in a broader shade

range, were reported to have improved light-fastness and reduced moisture-sensitivity. A new range of thick and thin yarns was introduced by the American Viscose Corp.

Emerging as the result of years of research and development, and probably entitled to be called the first new baby of 1954, Celanese Arnel triacetate fiber was announced to the trade in October. Initial output was confined to staple fiber in 2½-denier size but sample poundings of continuous filament yarns were also doled out to some mills. Arnel boasted of several characteristics of the newer synthetics, such as low moisture regain, quick-drying, good wrinkle-resistance, crease and pleat-retention and dimensional stability. These features, coupled with ready dyeability, good color-fastness, a high ironing temperature and the comparatively low price of 55 cents per pound stimulated prompt action by a number of mills to evaluate this newest addition to the ever-increasing family of man-made fibers.

In the acrylic branch of the family, still in the pilot plant stage, the American Cyanamid Co. revealed its X-54 as a newer model of the original X-51, while Tennessee Eastman was said to be conducting limited mill trials on a continuous filament version of their experimental acrylic fiber, as well as on a new polyester fiber identified as S-50. Dynel was made available in a new whitened form, priced slightly higher than regular fiber. "High bulk" Acrilan and Orlon, achieved through fiber modifications to yield higher than normal shrinkages in wet-processing, made their appearance in increasing quantities during the latter part of the year.

Mylar polyester film, in addition to being used as a base for metallic yarns of the type similar to Lurex, Metlon and Lame, was offered in thinly split form by one concern for yarns suitable for use where metallic yarns are currently employed. Metlon became available in staple fiber form for creating novel effects in blends and also in two-toned combinations. Data were released on the properties of Du Pont's Teflon tetrafluorethylene yarn which was marketed in limited quantities at \$14 per pound for 400 and 1,200-denier sizes, of interest for industrial uses where resistance to chemicals and high temperatures are essential. Staple of about seven-denier per filament was produced experimentally only. A patent issued to Du Pont last August described one unique method of extruding this new fiber.

Three new manufacturers of nylon "6" caprolactam fiber and yarn were in limited production by the end of the year. A comparatively small plant for the manufacture of a ten-denier nylon filament yarn from regenerated waste was

also under construction. A novel means for producing synthetic polymer filaments with a rough surface was disclosed in a patent assigned to Du Pont in December. Essentially the technique depends on the partial removal of a plasticizer by volatilization before drawing, the higher plasticizer content of the core producing a rough surface. After drawing, the remainder of the plasticizer is removed. Now that nylon has supplanted the hog to a large degree in the bristle field, the farmer's last stand to retain supremacy over the chemical laboratory was indicated in a report that keratin from chicken feathers was being spun into bristle fibers by the Rubberset Co. A few weeks ago Dow Chemical Co. announced that a new saran extrusion resin provided a 50 per cent reduction in static build-up in fabrics woven of monofilament yarns.

Activity in the development of new fibers outside of the U. S. was rather limited, according to reports published during the year. Courtaulds Ltd. made small amounts of a cellulose triacetate yarn labeled "J.P.S." early in the year and have now given the name of Courpleta to all such filament yarns and staple. Shortly after Celanese's introduction of Arnel, it was announced that Canadian Celanese Ltd. and British Celanese were producing similar fibers under the names of Trilan and Tricel, respectively.

From Germany came limited details of a spun-dyed Perlon and Perlon Endless yarn with high elasticity. A nubby "silk-like yarn" made by Bemberg was thought to be similar to yarns of the same appearance by American Bemberg, while Vistan was a German version of our Saran. In the realm of unconfirmed rumors, mention should be made of two additional "nylon-like" fibers: Efyron, derived from waste materials, was said to be superior to nylon, and Russian-born Nitrilon, claimed to be at least equivalent to nylon but more like natural silk while offering greater heat and light stability.

British Celanese F.H. fine denier filament acetate yarn with single filaments of only about one denier in size and reputed to have about 50 per cent greater tenacity than ordinary acetate was seen in limited amounts in England last Spring. Also originating in England were the new Courtaulds' Marlspun filament acetate, composed of pigmented white and solution-dyed filaments within the same yarn, and Ribbonstraw, a coarse denier acetate produced in over 40 different colors. Very recently Courtaulds Ltd. also disclosed plans to make high tenacity one-denier rayon staple.

The patent literature revealed a number of improvements in the old and suggestions for even newer synthetic textile materials. An increase in the melting point of polyamides was achieved through the application of the dry vapor of an aldehyde applied in the absence of water, according to one British patent. The North British Rayon Co. described the making of a thread with a coating of acrylic or polyethylene spaced "beads." Modified polyester fibers with a pitted surface were described in another patent issued to the Imperial Chemical Industries Ltd. Early in the year, means for continuously coloring Dacron polyester fiber or nylon were disclosed in two Du Pont patents. A unique method for producing coarse filaments was the subject of a British Celanese Co. patent which involved running a bundle of fine filament yarns through a volatile sol-

vent until they were stuck together. British Nylon Spinners and the I.C.I. patented means for producing non-circular cross-section polymer fibers said to provide greater covering power and attractive handle.

Modifications in viscose spinning solutions were proposed in two recent British patents. One suggested the incorporation of finely divided charcoal to make fibers more absorbent, as for use in bandage-like materials. The other described the addition of a phosphorous oxychloride and ammonia reaction product to impart fire-retardent properties.

Crimped filament yarns produced under the original Alexander Smith process, later taken over by the Joseph Bancroft & Sons Co., were christened Ban-Lon, and Du Pont registered Taslan as the name for textured yarns created by their unique air-blasting technique which was licensed to a number of throwsters and mills. A somewhat similar high-bulk acetate yarn produced by Eastman was seen in a limited amount of woven fabrics late in the year. Still another type of bulk nylon yarn was disclosed in the offering of Fluffon and Synfoam yarns by two processors apparently using the same method for which patents are pending. In February a patent was issued to the Collins and Aikman Corp. covering the production of an intermittently crimped twisted nylon ply yarn by passage through intermeshed driven gears which were disengaged to give deformed portions separated by straight portions.

One might suspect the wool interests of having sponsored the research of a German scientist who reported that moths eat all but glass fibers if they are in close proximity to wool or other keratin substances. It was reported that even the resins used for crease-resistant finishes on rayon have not been a deterrent to the hungry moths.

Natural Fibers

Comparatively little progress was recorded in the literature on research achievements directed toward improving or modifying the natural fibers. The big story on cyanoethylated cotton which made the headlines in 1953 was reactivated a few months ago when it was announced that pilot plant operations for the treatment of cotton yarns with acrylonitrile were well on their way. It was expected that large-scale evaluations would soon tell the story of practical applications and cost factors. In the meantime the name of Azoton was bestowed on these modified cotton fibers, adding one more word to the confused consumer's dictionary of fabulous fibers. There were no startling disclosures of proposed means of improving the wool fiber's properties or increasing its utility. Some recognition of the value of a man-made fiber to help one of nature's products was evidenced in the comments of the technical director of the Wool Bureau. He deplored the lethargic attitude of American manufacturers in not taking advantage of such developments as the use of soluble sodium alginate yarn for reinforcing fine woolen yarns to produce sheer fabrics, or the manufacture of woolen fabrics with greater rain-resistance by engineering designs for new structures. Silk, too, was the recipient of very little notice among research investigators, being content to continue to bask in its age-old glory as a luxury fiber for limited consumption in women's wear and somewhat increased acceptance in men's

higher-priced Summer suits. The proponents of ramie seemed to be enjoying a sabbatical year in the field of research, but in the words of a great general, it is almost certain that it will return.

Fiber and Yarn Processing

During the past year Saco-Lowell made available a new cotton opener, an improved 4 over 5 drawing frame, and the Robinette spinning ring with a new finish said to make for easier breaking-in. Their latest combing equipment provided high operating efficiencies with assemblies featuring three draft zones instead of two, a new self-cleaning draw box clearer and an improved coiler head and 14-inch cans. For blending synthetics and wool with greater uniformity of fiber length and sliver evenness, the Southwell Sizer with an output of about 300 pounds per hour was introduced to break fibers in top form into desired lengths. Whitin's new Axi-Feed and Axi-Flo openers and cleaners for raw cotton were claimed to reduce machinery investment, at the same time causing fewer neps and providing cleaner and better picker laps with a minimum of fiber damage. Their "Flex-Spin" wool spinning frame professed to offer a score of new features. Also offered by Whitin was the Speed-O-Matic filling bobbin winder operating at a speed of 12,500 r.p.m. to effect reduced winding costs and improved yarn quality. The Foster Model 66 winder with triple normal production per operator was credited with achieving the lowest winding cost per pound of yarn. Installment plan buying and the leasing of textile machinery were introduced by two American manufacturers early last year.

Several new roving and yarn bobbin cleaners were announced, each featuring high rate of operating speed and minimum damage to the bobbins. Du Pont patented an apparatus for imparting false twist to yarn, sliver and tow, and at Clemson College there was developed a pre-twister with rubber-faced belt said to reduce ends down on roving and spinning frames.

A novel machine for the production of zero twist yarns was the patented Tekja process developed by the Fiberbond Laboratories of Watertown, Mass. Roving is drafted into thin ribbons, saturated with adhesive, then passed between a series of rub rolls, dried and wound onto a package. Yarn spinning speeds of up to 55 yards per minute have been attained, and it was reported that yarns of from approximately 4s to finer than 60s count could be produced from all types of natural or man-made fibers. It was expected that the lack of twist would impart a soft, lofty hand for both knitted and woven fabrics.

Agilon was the name given to a new type of elastic yarn produced by a mechanical process invented by engineers of the Deering Milliken Research Trust and considered to be particularly suited for knitting. Earlier in 1954 the same research organization introduced the new Whirlwind two-for-one ply twister-winder for making industrial cords and arrangements were completed for its manufacture by the Warner & Swasey Co. Further evidence of the activities of this mill research group was demonstrated in their patenting a loom filling detecting device coated with polytetrafluorethylene to reduce surface lint and dirt accumulation.

Among the newer pieces of equipment and accessories exhibited at the Greenville Show were modified pickers to provide better control of uniformity, an improved Fiber-Meter, and spiral fluted card feed and draw-box rolls. A modified Flexal twister permits adjustable-gauge twisting with up to 50 per cent higher traverse speeds. The new Unidraft spinning frame as well as several converted frames to spin finer yarns were also on display. Two new spindle tapes utilized nylon. One, developed by the Firestone Plastics Corp., consisted of a Velon warp with nylon filling, a reduction in lint accumulation being attributed to differences in electric polarity between the two types of yarn. The other, Kennybond by the Wm. Kenyon Co., is made of woven spun nylon, heat-stabilized, stretched and bonded with a thin film of low melting nylon polymer.

Numerous foreign inventions and improvements also contributed to the art of fiber and yarn processing. Japanese textile manufacturers continued to show interest in the whale as a useful source of raw material. Two years ago attention was directed to their utilization of parts of this giant mammal to produce a new fiber. Last year a patent was issued to a Japanese inventor for the conversion of whale skin to a suitable spinning roll cover. An English-designed loading truck with two revolving six-foot wheels holding cones at an angle promised considerable labor saving in beam-creeling and a minimum of damage due to chafed cones. Also of English origin, the Prince, Smith & Stells Raper drawing system and Auto leveller featured conversion of worsted tops to roving in three to five operations, resulting in considerable savings in capital and labor costs. The German Kepa abridged spinning system was described as suitable for worsted, cotton and waste, using three gill boxes and high draft drawing and spinning. New Swiss high-speed uptwisters were regarded as of particular interest for the preparation of tire cord with low labor costs.

Warping, Slashing, Weaving

The McBride Tension-Master was designed to permit in-



stant adjustment of tension on warper-creels with numbered settings and from Holland came a report of a fully automatic sectional warper to accommodate beams of from 16 to 48 inches wide. Cocker offered a new high-speed spindle drive warper for cottons and a new high-speed all-purpose slasher, and Hayes Industries exhibited a 38-inch aluminum section beam for all modern cotton warpers with about twice the capacity of 30-inch beams.

The spraying of slasher cans with silicones was described by Celanese research workers as an inexpensive, effective means for eliminating sticking or size build-up. Increased drying capacity, uniform size application, and no rolling or ribbon formation were claimed for a sizing machine by Ira Griffin and Sons and the use of a water-soluble melted wax to over-size filament Dacron or nylon warps was credited with improved weaving efficiency, according to one South Carolina mill. Russian chemists reported the creation of new warp sizing of potato starch, gelatin, soap and chloramine, undoubtedly a first. A tastier product might be expected in American fabrics sized with materials containing a synthetic sugar developed by the National Sugar Refining Co. to add flexibility to sizing compounds.

Draper introduced the new XP-2 wide sheeting loom and three improved looms, two of which were archless. Hunt Loom and Machine Co. offered an air-conditioning device to provide humidity at the warp and the Southern Loom Development Co. demonstrated a completely electrified XD loom equipped with set-mark eliminator and positively controlled whiproll movement. This same company also offered an adjustable loom drive and an attachment for packing picks tightly into heavy goods. Crompton & Knowles Multi-Purpose looms featuring rotary magazine, scissors thread cutter, vacuum filling control, cone picking and new composite type letoffs provided higher speed operation and increased work assignments.

Celanese's experimental weaving section reported on the design of a "triple spring reed" for accomplishing substantial reduction of red marks in weaving. Since the Scotch are credited with extraordinary perception for savings, particular attention should be paid to the report that productivity may be improved by reduction in weave-room noise through the use of sound-absorbent wall tiles in a Dundee jute mill. The Warner and Swasey weaving machine can now be fitted with two-package filling mix and Crompton & Knowles made available the first pick-and-pick automatic loom ever produced in this country. The Swedish Maxbo Shuttleless pneumatic loom was modified to require less power and provide higher efficiency at speeds up to 320 picks per minute and improvements in a French shuttleless loom were expected to enable operation at speed of up to 500 picks per minute. The new German Domesta double gripper loom, said to be suitable for weaving all types of fabric, operates with filling inserted by groppers driven by a central planetary gear, the weaving units on either side.

Dyeing and Finishing

This brief review is not intended to enumerate the hundreds of new dyestuffs and chemical assistants and finishes developed during 1954, but mention is made of some of the more interesting discoveries of the past 12 months.

Construction changes were announced in the Barotor dyeing machine which eliminates the sliding bars and permitted the dyeing of some fabrics in a three-hour cycle without use of a carrier. New techniques for dyeing Acrilan and wool blends showed promise in providing greater versatility and lower costs. Pad dyeing synthetics with disperse dyes was accomplished by a new method involving passage through liquor containing a penetrant, swelling agent and gum, then developing in a jig, according to the Interchemical Corp., and flash ageing of vat prints was described as a practical means for reducing time while yielding superior color value at a lower cost. Improved continuous dyeing and the elimination of pilling of spun Dacron fabrics was reported achieved by the Hertaine process of the Fontaine Converting Works.

Pacific Mills patented a method for the setting of wool fabrics by subjecting the wet goods under tension to high intensity infrared radiation for a few seconds, and a New Jersey inventor reported that he had concocted a new hydrocarbon product to remove the itch from wool, "desensitizing" the fiber or fabric to eliminate allergies. An American blanket manufacturer turned to an Italian napping machine to obtain luxury blankets of "triple" thickness.

A new Proctor and Schwartz oscillating fulling and napping machine was designed for processing woolen goods, and in November a patent was issued to Du Pont, General Electric and H. W. Butterworth on an apparatus for dyeing textile materials with the unique feature of a vibrating member to stretch and relax fabrics in the bath.

Superior wrinkle-recovery of cotton fabrics was claimed through the use of a new catalyst of the American Cyanamid Co. making curing control of melamine formaldehyde resin less critical and showing little loss of fabric tensile strength or yellowing under accelerated chlorine test procedures. In response to the common question "what's new?" Monsanto Chemical offered a simple answer by disclosing that Nu is a fabric finish designed to eliminate starching. The chemical industry was still seriously concerned with the creation of products to effect durable stabilization of rayon fabrics without embrittlement usually attributed to most resin finishes, and the Onyx Oil and Chemical Co. entered a new contender in the field under the name of Cet. Avoiding the use of chemicals, a new compressive shrinkage unit for all types of fabrics was the invention of the Fabric Research Laboratories Inc., but no details were released regarding its construction or operation. A New England finisher recently announced Ice as its name for the hottest cotton permanent finish in the industry. The U.S.D.A. Southern Regional Research Laboratory reported the development of a new wash-resistant flame-resistant finish for cotton fabrics based on the use of an emulsion of an organic bromine-phosphorus polymer.

Foreign ingenuity in improvements in dyeing and finishing techniques continued to keep pace with our own scientific achievements. A Hungarian scientist reported that by treating wool with sodium nitrite and an undisclosed acid he made the fiber receptive to coloring by an organic chemical solution in ten shades, with the added attraction of a 40 per cent increase in the strength and elasticity of the wool. No reference was made to the use of a grain of salt in the process.

Simultaneous dyeing and heat-setting of Terylene fabrics was the subject of a patent issued to the Imperial Chemical Industries, and also of English origin was a new pressure dyeing jib in which the dye bath and roller assembly are mounted on a carriage that can be run in and out of a stainless steel pressure vessel, of particular advantage for the dyeing of the newer synthetics. From Scotland came reports of a bleachery which had developed a new cotton finish to impart a smooth, lint-free surface by a partial dissolving of the cotton fibers.

German developments included a continuous wet-steam vat dyeing process claimed to eliminate intermediate drying, leveling off irregularities and reducing water stains, and a dyeing machine fabricated in seamless construction of a plastic declared suitable for acid and alkaline dyeing baths but not for bleaching. Also of German origin was a vibrator to be used to give better penetration of water-proofing compounds to fabrics in as little as five minutes and the Haas short loop drier featuring elimination of "pole marks" and a patented mechanism to avoid tension on the short loops of cloth. Permanent impregnation of wrinkle-resistant resins by using superheated steam combining drying and condensation in one operation was the joint discovery of a German professor and machine company. Both Switzerland and Germany were credited with a combination of machines to produce flock-printed fabric effects with an output of up to 1,500 yards daily.

Reminiscent of our childhood activities in simulating tattoo effects on our arms was the idea of a Netherlands inventor who transferred designs on textile materials by use of decalcomania sheet. A new Swedish pad-roll dyeing machine was offered to the domestic market with claims for improved dyeing with direct colors. According to a report carried in an English journal, the application of vat dyestuffs for the printing of acetate fabrics was aided through the use of a new reducing agent which eliminated need for saponification.

New Developments in Fabrics

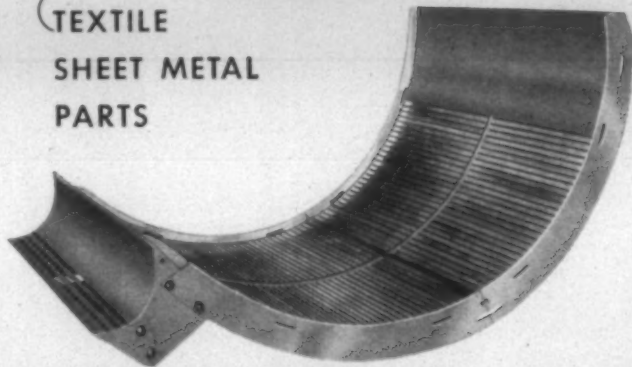
New aids for keeping warm were offered with the introduction of Escaline, a quilted lining made with acetate crepe face, acetate filling and a cheese cloth back, and a washable Milium Orlon taffeta. At the same time, a consumer's product testing organization warned that some napped rayon materials used in electric blankets were dangerously flammable and careless smokers might find themselves enveloped with more than a comfortable degree of warmth.

A stabilized sail cloth featuring good strength, sewability, dimensional stability and weather-resistance was fabricated by chemically bonding together two layers of Dacron or Orlon fabric. Orlon and Dynel were blended in a new pile fabric construction for the fancier of economical fur-like coats, and the Navy was reported to be evaluating kapok-wool blends for overcoatings. Increasing utilization of Dacron was noted in more blends with cotton to impart wrinkle-resistance, quick-drying and improved wearing qualities in shirtings, slack fabrics and rainwear, but one English textile magazine publisher resented the use of an American firm's name of London Fog for his raincoat materials. One large manufacturer made use of Dacron

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TEXTILE SHEET METAL
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A sheet metal works serving textile mills

as a reinforcement in the selvages of cotton turkish towels. Fabrics of blends of rayon with cotton for work clothing and uniforms were reported to give wearing qualities superior to all cotton fabrics of similar construction, according to reports which followed lengthy service evaluations made under the direction of the English Courtaulds Co. scientists. American spinners, weavers and garment manufacturers expressed considerable interest in this new evidence of rayon's durability and plant trials were initiated to attempt to confirm the findings reported from England.

Water-impermeable rubber-coated fabric which retained "breathing" properties was announced as a new product of the Alden Rubber Co. A German process claiming to yield fabrics which were wrinkle and dirt-resistant depended on the application of a resin to staple fibers after spinning.

For those mills still rugged enough to endure the introduction of one more new man-made yarn, a British patent issued to Courtaulds Ltd. last year may be of interest. Differential color or luster effects in fabrics is achieved through the use of acetates made by different processes and having dissimilar delustering and dyeing characteristics.

The bonding of rubber foam to fabrics took on increasing importance with the development of a new rayon terry cloth fabric combined with a thick sponge rubber backing to produce attractive automobile floor coverings. Some automobile manufacturers showed interest in similar latex foam rubber-backed knitted and woven acetate fabrics for upholstery. To compete with the conventional cotton convertible automobile topping and the newer 100 per cent solution-dyed fabrics, one coater reported progress in the development of a vinyl-coated fabric material for this purpose.

A few years ago French fabrics of one of the hydrophobic yarns were credited with having therapeutic value in the treatment of rheumatism when worn next to the skin, probably due to the generation of static electricity charges. Last year it was suggested by a New Zealand Marine official that Orlon acrylic fiber shirts might create a navigation hazard because of the static electricity effects on ships' compasses.

More competition for the textile industry was seen in the creation of woven chemically treated paper from slip-covers and upholstery, flame-proofed non-woven cotton disposable towels for wiping cloths, a cushioning of a web of rubber fibers developed by the American Viscose Corp., and an interlining fabric made of bonded rayon, nylon and latex. From France came reports of a polyurethane sponge material for interlining uses. The product is prepared from the chemical powder currently produced in Germany and a few weeks ago it was reported that several American concerns were preparing to turn out similar materials.

Testing Methods and Equipment

The Stelometer was described as a new direct-reading pendulum type fiber strength and elongation tester. From Texas Tech College laboratories came an improved variable torque vise for use with the Pressley fiber tester, and the N. C. State College School of Textiles, working for the U. S. Dept. of Agriculture, designed a Nepotometer nep potential tester. The West Point Mfg. Co. Neptel electronic instrument made possible the measuring of cotton yarn

faults, showing good correlation with seri-plane appearance standards on carded and combed cotton yarns. New lap testers were offered by the Precision Gear & Machine Co. and the Brush Electronics Co., and a new Shadowgraph provided means for determining the yarn number of sliver directly without the use of a conversion table.

The first Brush Tension Analyzer unit, developed in cooperation with the American Viscose Corp., featured high-speed recording, instantaneous measurement of dynamic and static tensions in filament yarns of from 1/10 to 400 grams. More widespread use of precision testing of yarns was foreseen with the introduction of a lower-priced table model Instron Tester with a range of from ten grams to 100 pounds. The Uster Spectrograph was offered as a supplementary piece of equipment to the evenness tester for advanced interpretation and recording of yarn unevenness, and the company's Hy-Lo Indicator automatically counts the number of heavy and light imperfections in yarn, roving, sliver and picker laps. For yarn breaking strength and elongation testing, this same company also introduced a device to test up to ten bobbins of yarn automatically, recording the results and producing a frequency distribution curve.

With continuing interest in the problems of static electricity and the introduction of many new anti-static chemical agents during the year, an instrument for measuring static electricity on synthetic filament yarns and for the evaluation of antistatic agents, created by the department of textile research at N. C. State College, was exhibited last Fall by the Standard Chemical Products Co.

Further progress in arriving at some means for measuring fabric handle was indicated in the creation of a machine called the Handle-O-Meter by Johnson and Johnson scientists who claimed that determinations could be made in 15 seconds. Also useful for fabric property studies was the Drape Flex-Tester of the Naval Clothing Supply office, designed to measure flex stiffness. A new inexpensive model of the Appearance Retention Tester originally developed for the same government agency was said to provide a combination of fabric pilling and abrasion tests with good correlation with service results. Abrasion testing was also highlighted by a patent assigned to the Asbestos Textile Institute for apparatus which provides means for holding strips of material on a rotating roll and rubbing protruding loops against an abrasive substance.

A pendulum impact tester suitable for determining impact tear and tensile strength of a wide variety of fabrics was the invention of two U. S. Rubber Co. technicians and data were presented to show appreciable time saving in testing some fabrics. Contributions in the field of optics included a new microscope projector suitable for casting an image on an eight-inch glass screen at from 75 to 500 magnifications, and the Bausch and Lomb Spectronic combined colorimeter and spectro photometer.

Laboratory equipment made available last year included a small Barotor pressure dyeing machine, a portable dryer with a wide control of temperature, air volume and relative humidity and a stainless steel package dyeing machine. Du Pont Jackson laboratory technicians designed equipment for the dyeing of 50 to 100 gram fiber samples at temperatures up to 300° F. German-made laboratory jig

and pad were imported for sale in this country by the Nova Chemical Co.

Designated as the C & R Tester and combining a number of A.S.T.M. specifications for thickness measurements into one instrument, a new device by Custom Scientific Instruments Inc. permitted determinations of fabric thickness, compression and recovery.

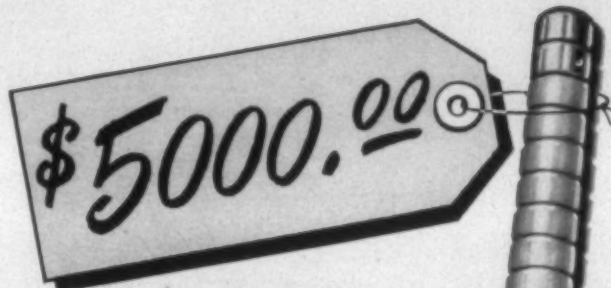
A rapid test for gas-fading of dyed acetate fabrics was described in a recent issue of the *American Dyestuff Reporter*, and the same publication carried a report on the results of a study of 16 fabrics laundered by eight laboratory methods showing that the standard CCC-T-191 test gave results comparable to those obtained in commercial laundering. One of the Du Pont technical bulletins described a rapid method for distinguishing between the various acrylic fibers.

From Italy came a tester providing means for making dynamic tests for fabric seam slippage and two German instruments now available through the Stellite American Corp. are a fiber staple sorter and a fabric flex tester. An English dyestuff manufacturer invented two simple pieces of equipment for making laboratory dyeings on fiber in bulk or roving form. Of English origin, too, was the Cook Constant Tension Continuous Winding Tester, a device for mill control testing of average yarn strength and elongation. The *Journal of the Textile Institute* published details of a comprehensive plan for the identification of 70 different natural and man-made fibers, utilizing the microscope and chemical tests. Also from England came reports of a new Automat radiation thickness and weight gauge, one of the first applications of atomic energy to the textile industry, with suggested use for determining the thickness and penetration of coatings on fabrics. A Swiss textile school teacher invented an instrument to facilitate the analysis of fabrics and record the design pattern on squared paper.

Organization and Research Institute Activities

During 1954 more and more fiber and yarn producers, chemical and sizing manufacturers and mills availed themselves of the excellent facilities offered by our textile schools to evaluate products and processes without depending on mills and finishers who are occupied with their own production problems. It is interesting to note that in England, too, the Manchester School of Technology added a new dyehouse, complete with all types of modern processing equipment, and it is expected that they will also provide a similar service to the textile industry in that country. At the same time, domestic producers of man-made fibers and yarns continued to recognize the need for expanding research, as was evidenced by the opening of a new five million dollar Du Pont textile research laboratory, the construction of new research laboratories by the American Enka Corp. and the Eastman development laboratory for spun acetate and blends. The Du Pont Co. of Canada announced plans for the erection of a one and a half million dollar fundamental research center, and the Courtaulds Ltd. Arrow Mill in England is expanding experimental spinning machinery on all systems.

The National Cotton Council held its annual research clinics for the presentation of the latest developments in cotton processing and chemical finishing, and in Canada



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the Textile Technical Federation sponsored its Fourth Seminar with valuable contributions made by leading scientists from Canada, the U. S. and abroad. The textile section of the A.S.T.M. established new and improved methods for the measurement of cotton fiber length and the determination of fiber immaturity. It also reported progress in the study of crease-recovery measuring techniques, wool testing projects and fabric performance. The annual A.A.T.C.C. convention attracted one of the largest audiences in history for the presentation of the most recent developments in dyeing and finishing. Less publicized but continuing to play a vital part in the discussion of research studies of a more fundamental nature were the meetings of the Fiber Society and the Gordon Chemical Research Conferences. A tribute to the activities of the Textile Research Institute was demonstrated in the continuing support of the industry in spite of a 50 per cent increase in dues during a period when textile manufacturers were experiencing a general decline in profits. The Southern Regional Research Laboratory again made important contributions in all areas of research on cotton and at Natick, Mass., the new U. S. Quartermaster Research and Development center provided the most complete and modern research laboratories of their kind in the world.

During the Summer, the British Rayon Research Association moved to its new quarters near Manchester, with sections for fiber and yarn processing, fabric dyeing and finishing, as well as a group of laboratories for fundamental research on all man-made fibers. In Paris the first International Congress on Man-Made Textiles drew thousands of delegates from over 30 countries last June and smaller assemblies of no less importance to research workers convened in England and in Belgium to discuss technical advances in cotton and the man-made fibers and fiber friction.

The effects of nuclear radiation on fibers and fabrics were being investigated at the N. C. State College School of Textiles as well as by the U. S. Quartermaster scientists. Among A.A.T.C.C. research projects now under way are the study of the correlation of abrasion results obtained by the Accelerator and other laboratory devices and the effect of synthetic detergents versus soap and optical bleaches on colorfastness. Proposal has been made to undertake the investigation of procedures for evaluating the effect of textile products on the human skin.

New means for handling acrylic fiber tow, part of which is relaxed while the remainder is unrelaxed, by a heat-stretching technique were responsible for creating great demand for such yarns to be used in sweaters and other knitgoods. More recently these bulkier and loftier yarns have also found their way into woven fabrics. The use of fluorescent dye on at least one type of fiber to distinguish it from others in a blend by examination under ultraviolet light was the subject of a patent assigned to the American Cyanamid Co.

To those who continue to malign the textile industry with the assertion that we are taking a back seat in our research activities and accomplishments as compared with other industries, we can only suggest that they take time to look at the record—or admit that the back seat drivers have a great deal to do with guiding us to our destination.

National Cotton Week Announced By Council

The 25th annual celebration of National Cotton Council Week will be observed May 9-14. The first Cotton Week was held June 1-6, 1931, as a depression-born merchandising program designed to restore stability to a shaky industry during the days of "ten-cent cotton."

Described at the time as "one of the most ambitious cotton goods selling campaigns ever attempted in the U. S.," the event was first announced in Washington on May 10, 1931, at a conference between Secretary of Commerce Lamont, Secretary of Agriculture Hyde, C. J. Callaway, president, American Cotton Manufacturers Association, and George A. Sloan, president, Cotton Textile Institute. That day New York spot cotton was quoted at ten cents a pound. Charles K. Everett of New York, then a staff executive of the Cotton Textile Institute, is credited with originating the promotion idea.

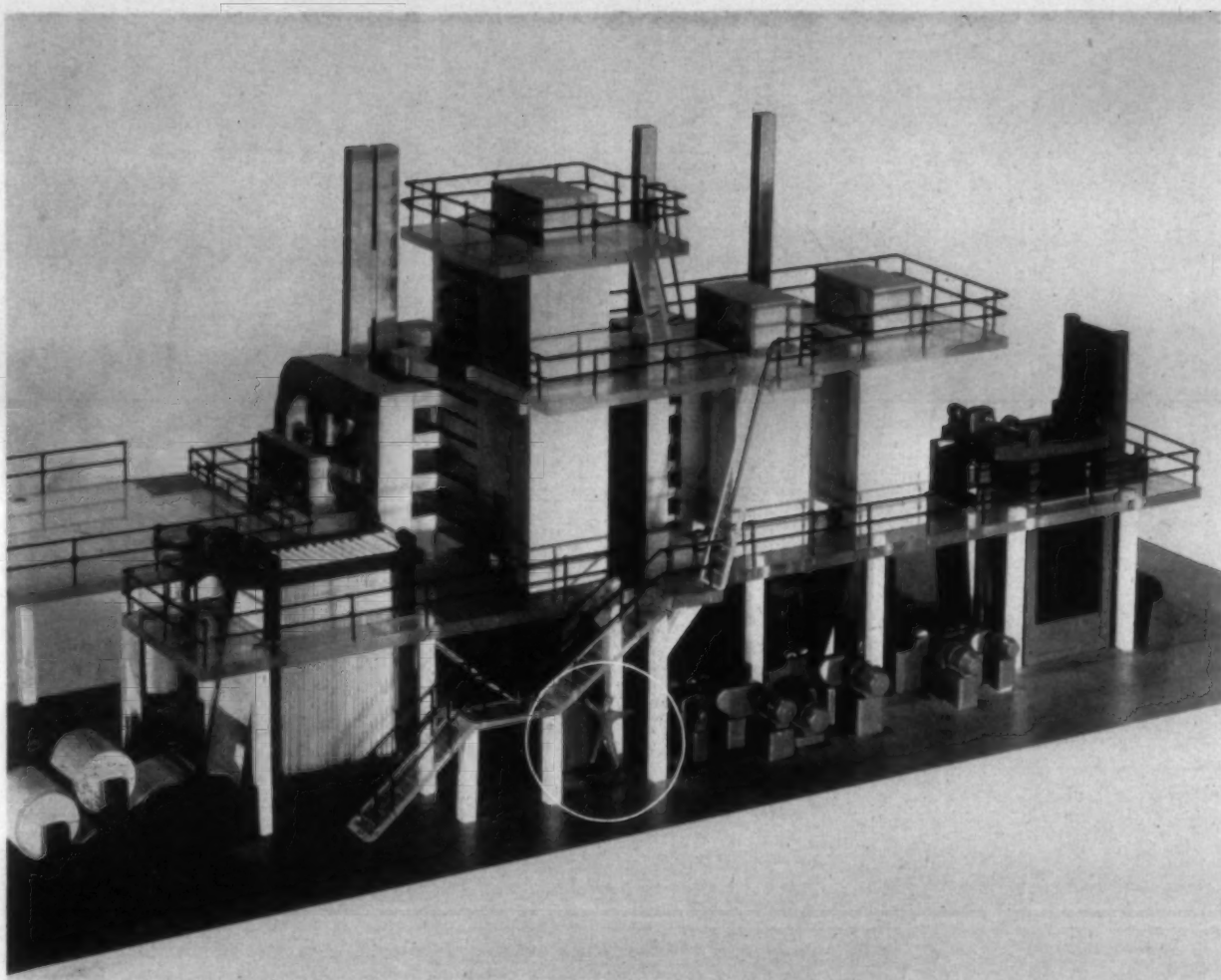
Cotton Week was sponsored by the institute for nine years and jointly by the institute and the National Cotton Council following the organization of the council at Memphis in 1939. It has been sponsored by the council since 1949, when the Cotton Textile Institute merged with the American Cotton Manufacturers Association as the present American Cotton Manufacturers Institute. Through the years, Cotton Week has become known as "America's No. 1 Fiber Promotion," stressing the quality and fashion appeal of apparel and household cottons on a storewide basis.

Tax "Workshop" To Be Held At Charlotte

A two-day "workshop" meeting for textile mill personnel who deal with tax matters has been arranged by the American Cotton Manufacturers Institute, central trade association of the industry. The sessions will be held at the Barringer Hotel in Charlotte, N. C., Friday and Saturday, Feb. 25 and 26, according to an announcement by J. Craig Smith, Sylacauga, Ala., president of the institute.

The meeting is intended to clarify for textile mills much of the uncertainty pertaining to portions of the new Internal Revenue Code, and qualified experts will discuss and explain its various provisions. A considerable portion of the time, Mr. Smith added, will be devoted to question and answer periods, and he urged that as many mills as possible send to the meeting those of their personnel who actually work on tax matters.

The meeting was initiated by the institute's tax committee, of which E. M. Fuller, Greenwood Mills Inc., New York City, is chairman. The program is being arranged with the assistance of Richard B. Barker of Washington, D. C., counsel to the committee. Other tax committee members are: Harold W. Smith, Cone Mills Corp., Greensboro, N. C.; T. Scott Avary, West Point (Ga.) Mfg. Co.; Andrew J. Cothran, Graniteville (S. C.) Co.; Paul E. Crocker, Pepperell Mfg. Co., Boston, Mass.; S. A. Hickox, Woodside Mills, Greenville, S. C.; J. C. Hubbard, The Springs Cotton Mills, Lancaster, S. C.; Benjamin O. Johnson, Spartan Mills, Spartanburg, S. C.; C. W. Kable Jr., Deering, Milliken & Co. Inc., New York City; W. C. Neely, Clinton (S. C.) Cotton Mills; James L. Rankin, Ewing-Thomas Corp., Chester, Pa.; Andrew B. Trudgian, J. P. Stevens & Co. Inc., New York City; C. R. Walters, The Abney Mills, Greenwood, S. C.; and John V. van Pelt III, The Kendall Co., Walpole, Mass. The sessions are to begin on Friday morning at 9:30 and will be concluded at noon on Saturday.



Aptly described as a factory within itself, Firestone's mammoth safety tension gum-dipping unit is as high as a five-story building and three times as long as it is high. Despite its size, the unit can be operated by only two men, assisted by a network of electronic control instruments which are centrally located on one control panel. The operator in this scale model photo indicates the comparative size of the unit.

Firestone Unveils Its Continuous Electronic Tire Cord Processor

ONE of the first problems encountered by tire manufacturers as they switched from cotton cords to synthetic fiber cords was the fact that the latter, unlike the cotton, would stretch or expand under the heat created by fast driving. The expanding synthetic fibers would crack the tread or result in ply separation. A way had to be developed to take the stretch out of the cords by applying controlled tension at precise temperatures, thereby locking the cords and giving them a permanent set.

Tackling the problem, engineers of Firestone Tire & Rubber Co. developed a gum-dipping process that impregnated the filaments of the tire cord with chemicals and liquid rubber which gave firm adhesion between the plies and the tread. (An exclusive gum-dipping process had been introduced by Firestone back in 1920 when only cotton cords were used.) Effective though it was, the process

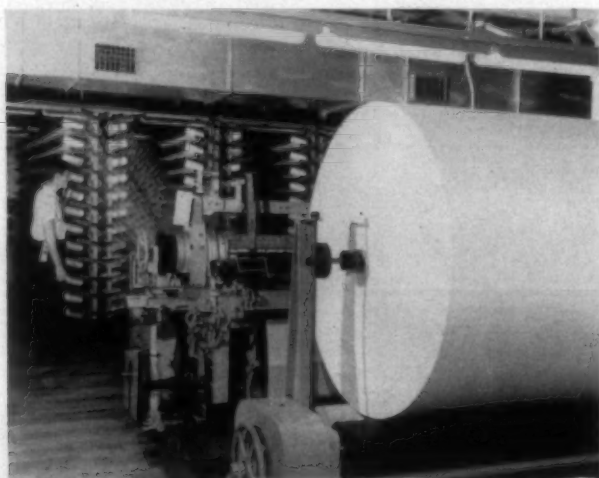
required two separate operations, both of which were costly and time-consuming. Production demands, as well as the cost factor, necessitated the development of a single process that would do both operations while at the same time assuring uniform quality.

Six years of research, development, construction, modifying, more research and the ironing out of countless technical "bugs" finally gave birth to an enormous yet precision unit that not only performs the two operations in a continuous uniform process, but enables mass production limited only by the availability of nylon cord.

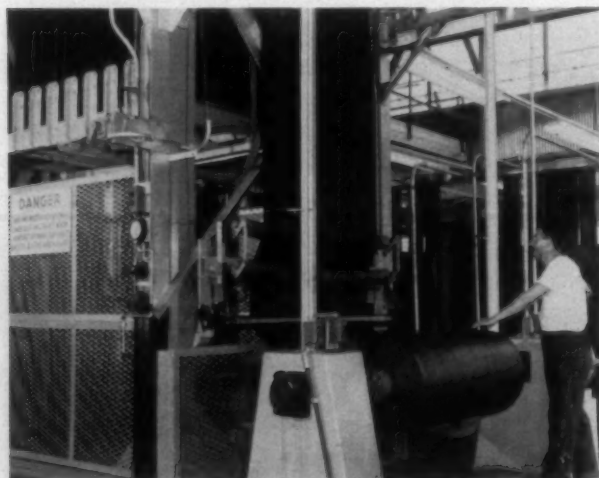
The finished product, a mere five stories high and three times as long, is now on one-shift operation at Firestone's textile division at Gastonia, N. C. Turning out 30 yards of treated fabric a minute, and actually capable of twice that, the unit is said to be the first cord-treating "factory" of



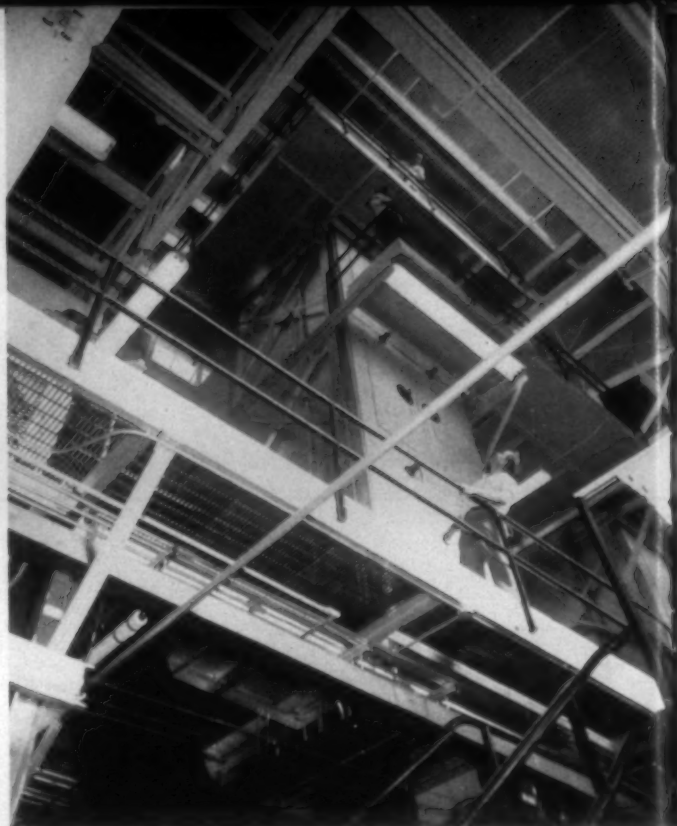
The first step in the fabrication of tire cord fabric is the ply twisting operation. The Gastonia plant receives its nylon on beams from suppliers and ply twisting is done directly from the beams. Each beam contains about 160 ends. Nylon travelers are used on the twisters.



The weaving of the nylon filament is accomplished directly from the spools. Cotton filling is used for the nylon cords and rayon for rayon cords. The fabric is loosely woven inasmuch as the cords are woven merely to keep them parallel. The filling disintegrates in the gum-dipping process.



The treated fabric is doffed in rolls of about 1,100 yards and is ready for shipment to Firestone tire plants. The unit increases the length of the fabric some ten per cent during processing, although both length and width are variables that can be exactly controlled.



This tower is one of several giant, gas-fired, heat-treating ovens that are part of the processing unit. The unit is so high that, besides the ground level, three other levels of platforms, connected with steps and ship's ladders, are necessary to make different areas accessible to operators.

its kind in the world. The unit can treat either rayon or nylon, although currently production is solely on the latter.

Describing the tension gum-dip unit, Firestone officials point out that it contains a chemical mixing section, giant gas-fired, multiple heat-treating towers and bank after bank of huge, individually powered tension rolls. Only two men are required to operate it, assisted by an array of electronic control instruments, centrally located, that maintain constant control at 56 different locations.

As the loosely woven cords pass through the unit, they are softened with a secret chemical solution, then stretched and tempered in a three-stage bank of powerful water-cooled tension rolls and high-temperature, direct, gas-fired ovens. This conditions the fabric to absorb the penetrating gum dip which gives greater adhesion of the rubber to the fabric. This conditioning is essential since there is no natural adhesion of either rayon or nylon to rubber.

As can readily be visualized, various other problems cropped up during the readying process and the initial stages of production. To keep the unit in continuous operation, for example, the Firestone engineers had to develop special automatic roll-changing and fabric-splicing equipment. The unit could not be stopped between roll changes for the simple reason that overexposure to the heat in the ovens would melt the fabric. The special splicing equipment developed exerts a pressure of 900 pounds per square inch, providing strong splices that allow the fabric to go through the unit smoothly. The splicing of a roll or the doffing of a treated roll have been reduced to a relatively simple operation that can be accomplished in less than a minute while a take-up and slack-off arrangement allows the unit to continue production at no reduction in speed.

To feed the unit, which figuratively speaking stays as hungry as a visiting relative, Firestone employs the largest

rolls of fabric ever produced from looms. To begin with, the first operation at the plant is single strand twisting followed by two-ply twisting. Twisting is accomplished directly from the beams, with 160 ends per beam. The twisters are equipped with nylon travelers to cut down on downtime and they automatically stop their own ends when they are down, reducing cost and labor.

The weaving process consists of criss-cross strands, delivered directly from the spools, which serve only to keep the nylon strands horizontal as they are processed in the gum-dip unit. For the cross strands, spaced some three-quarters of an inch apart, cotton is used for nylon cords and rayon for rayon cords. The cross strands disappear in the processing since cross strands in the finished tire would cause too much friction. For this reason, with all strands running in one direction, the material is not a true fabric

but rather a tire "cord." Each roll from the loom weighs approximately 3,480 pounds and contains 4,200 yards of fabric. Overhead conveyors deliver the rolls to an automatic elevator that takes the rolls to the separate building that houses the gum-dip unit. At 30 yards a minute, each roll is treated in about two hours time. For ease in shipping, the treated rolls are doffed at about 1,100 yards, or four processed rolls for each untreated roll.

The fabric is then shipped to all Firestone's tire factories to go into the production of the company's premium grade tires. Most of the output is now channeled into tubeless tires, which are expected by Firestone to eventually become standard equipment on all new cars.

Firestone's Gastonia unit, of course, is not entirely concentrated on the processing of rayon and nylon for tire cord. With some 2,300 employees in all, less than half of them are currently processing fabric for the new gum-dip unit.

Coming Trend?

Bringing The Sheep To The Mill

By HENRY LESENE

THE South, center of the cotton, rayon and synthetic fiber industries both from the standpoint of raw material and woven product, is now witnessing what seems to be at least an auspicious beginning of an integrated woolen industry—that is, from sheep to finished fabric.

Oddy enough, however, the pattern is somewhat the reverse of the development of the cotton textile industry in this country and its ultimate relocation principally in the Carolinas, Georgia and Alabama, and spilling over into adjacent states.

The magic words which swept through the Southern Piedmont in the last decades of the nineteenth century just before the coming of hydro-electric power were "Bring the mills to the cotton fields!"

Now there seems to be another idea rapidly gaining momentum, somewhat the earlier trend in reverse. It's "Bring the sheep to the mills!" The fact is, new woolen mills have been dotting the countryside in the post-war period and the Southeast, according to the best estimates, currently accounts for about 15 per cent or more of the nation's wool cloth production compared to a prewar five per cent.

Sheep production in the area, however, is so negligible as to be hardly worth mentioning. This is despite the fact that in the last decade there has been a phenomenal advance in livestock and poultry production in the region. Until now, however, there wasn't any great incentive to try to launch a substantial sheep-raising industry.

Another rather significant straw in the wind is that the carpet manufacturing industry may be beginning to follow the other textile and textile related industries in the South.

The South from the beginning, of course, has been the center of the new and growing tufted carpet industry, centered largely in North Georgia, but now the wool carpet industry seems to be looking Southward.

Alexander Smith Inc., largest carpet manufacturer in the world, recently closed permanently its huge Yonkers, N. Y., plant, and bought the new Liberty, S. C., plant of Julius Kayser & Co., doubled its capacity, and plans to weave and finish velvet carpets there. This is in the nature of a further consolidation of the company's Southern operations, since it has a modern 15-acre postwar carpet plant in Greenville, Miss.

Some observers feel that the Alexander Smith move could well mean that in the not-so-distant future the soft surface floor covering industry may be largely concentrated in the Southeast instead of in Pennsylvania, New Jersey, New York and New England as at present.

In a significant move a few years ago—the first of its kind—one of the major producers, James Lees & Sons Co. Inc., built a carpet weaving mill at Glasgow, Va. In the trade this company is rated as one of the best, if not the best, money makers in the field.

While things are looking up in the carpet field, with a million-dollar advertising and promotional campaign in 1955, the industry has been through a long distress period. And large old line companies in the East in the last few years have begun to beat the serious competition from cotton and tufted carpeting manufacturers in the South by acquiring their own tufted plants in the South.

Meanwhile, the thoroughness and vigor with which certain wool top manufacturers and the agriculture people, as well as some business and financial interests concerned with Southern economic development, are now getting in behind the idea of a Southern sheep industry could well make the words "Bring the sheep to the mills" prophetic.

There are several factors which now tend to spur the launching of a sheep industry in the Southeast. Although world production of wool is climbing from year to year, domestic production has been sagging badly and the gov-



Polworth sheep from Australia being unloaded near Florence, S. C., for delivery to the Wellman Combing-Clemson College sheep-raising project.

ernment has boosted the price support level to 106 per cent of parity in an effort to reach a 1955 goal of 300 million pounds.

It is guaranteeing 62 cents on the 1955 clip. That is 17 per cent above the former support level. If the higher subsidy boosts 1955 production to the projected goal, the Agriculture Department is expected to raise the target even higher in 1956. It has been indicated the 1955 clip will be allowed to seek its own level in a free market, the government making up the difference to the producers out of duties on wool imports.

Big factor in the Southern picture, however, is that the region is now getting its first two giant wool combing plants, which process the "grease" wool for sale to the textile mills. Charleston has already become a port of entry for raw wool. It is estimated that when the contemplated ultimate expansion of these combing plants is completed, tripling or quadrupling the initially planned capacity, they will be able to process the wool from literally millions of sheep annually.

And, as the Georgia extension service officials recently put it, there is an urgent need now for a new source of income that can be realized from grassland farming, especially on those farms which are too small to support a beef cattle herd, and sheep seem to be a "natural" to fill this need.

While U. S. consumer spending habits and the trend toward casual apparel in recent years have had a marked effect on the wool textile industry, many in the trade express the view that increased wool production is the wool-

growing industry's best answer to the challenge of competitive fibers.

R. G. Lund, a director of the Wool Bureau, recently described the situation this way: "The greatest danger to wool will arise if production does not keep pace with demand. The threat from man-made fibers is in terms of quantity and price, not quality."

And still another thing, of course, is that to all livestock and poultry production, the age of the "wonder drugs" has been a great boom, with broad spectrum antibiotics like aureomycin, for instance, not only conquering various diseases in animals and poultry but at what in livestock is caused "effective level" feeding also stimulating growth and heading off disease or "shaking it off" when it does occur.

The most significant thing currently on the Southern livestock scene, and probably a harbinger of what is to come, is the fact that a hundred pedigreed Polworth sheep, recently imported from Australia, are now shepherded on a 134-acre tract in Florence County near Johnsonville, in the shadow of the region's first wool combing facility.

These are the first Polworth sheep to be imported into the United States in any significant quantity. The Polworth, a breed developed in Australia about 1880, is a dual purpose animal, producing a high quality carcass as well as fine wool. The project is being directed by Clemson College as a demonstration of the possibilities of sheep raising in South Carolina. A complete irrigation system is being installed to produce the maximum amount of year-round grazing.

For several years now neighboring Georgia has been seeking to promote a large sheep industry. As a further move in this direction the University of Georgia Agricultural Extension Service has just appointed its first livestock specialist in charge of sheep production. It is planned to set up demonstration sheep farms in each of Georgia's ten congressional districts.

A guiding spirit behind the Georgia program in recent years to get a sheep raising program launched has been Mills B. Lane, president of the Citizens & Southern Bank of Atlanta and the extension service is sponsoring the new program in co-operation with him. It's all pretty much the same sort of story in most of the other Southeastern states.

Meanwhile, development board officials in the Southeast make no secret of the fact they expect the location of two giant wool combing plants in South Carolina to accelerate the trend toward relocation of the wool spinning and weaving mills in the region. Recent reports in the trade, in fact, indicate several worsted firms are currently seeking Southern sites. Bulk of the industry is still centered in New England.

This is an architect's view of the South's second wool combing plant, Santee River Wool Combing Co., now under construction at Jamestown, S. C. It will be a unit of Amedee Prouvost of Roubaix, France, one of the two largest wool processing firms in the world.



Until the middle of 1954 the Southeast didn't have a wool combing plant. In fact, there is at present a large surplus of wool combing capacity and when Nichols & Co., Boston topmakers, decided last year on building the first Southern combing plant, it was largely from the standpoint of convenience in serving Southern customers.

As the result, there now stands about a half mile from Johnsonville, a little town of 700 population, a huge one-story, air-conditioned, 800-foot long combing plant in the center of a 200-acre tract, built at a cost of \$3 to \$4 million.

The present capacity of the Johnsonville plant is 80,000 pounds of grease wool. Most of the south wall of the "dream" plant is temporary. The reason is that it is planned eventually to increase the plant's size threefold and hike capacity up to 250,000 or 300,000 pounds.

Wool processed in the Johnsonville plant—known as the Wellman Combing Co.—comes from all parts of the world. At present in South Carolina there are only about 5,000 sheep on 150 farms. Only three states have fewer sheep than South Carolina. Its neighbor, North Carolina, also a relatively small sheep-raising state, by way of comparison has 50,000 sheep.

Yet it is estimated that the Johnsonville plant could use the wool produced from the sheep population of both the Carolinas in less than four days of plant operation. And the Johnsonville plant is only the beginning. The year 1955 is expected to see completion of another large combing plant near Jamestown in Berkeley County. It will be roughly the same size as the plant at Johnsonville, with an area of about 150,000 square feet.

The present-day Jamestown consists of merely a few cross-roads stores near the once mighty Santee River, whose flow has been greatly reduced by the impounding of its waters in the Santee-Cooper hydro-electric reservoirs about 20 years ago.

Yet it was at Jamestown, along the south bank of the Santee, that there settled about 1690 nearly 100 French Huguenot families, the largest Huguenot settlement in the whole province of Carolina outside of Charleston. Within

a few decades however, the Jamestown area became relatively depleted by the migration of the Huguenot settlers upstream into Georgetown, Williamsburg and Clarendon counties.

Therefore it is rather a striking historical coincidence that Jamestown is the site for such an industrial plant, to be known as the Santee River Wool Combing Co. For the plant is a unit of Amedee Prouvost of Roubaix, France, one of the two largest wool processing firms in the world. Thus to the wilderness along the Santee, the French, in a sense, are returning after nearly 270 years.

Just as the Wellman plant at Johnsonville contemplates, the French firm also is planning, as soon as possible, to expand its initial plant by three or four times.

The Polworth sheep-raising venture in Florence County is known as Wellman Research Project, because the Wellman Combing Co. is sponsoring it, though it is being supervised by Clemson College. Meanwhile a number of Rambouillet, a Texas breed of sheep, are currently being imported into Florence County and sold to farmers already interested in sheep-raising. Farmers in the Johnsonville area are reported to be planning to go into sheep production in a large way.

S. C. Points With Pride To Industrial Gains

The growing South Carolina industrial economy received a substantial boost during 1954, according to data released recently by S. W. Gable, acting director of the State Development Board. More than \$76,000,000 was spent or allocated for industrial development in the state during the year, bringing the post-war industrial growth of South Carolina to approximately \$938,000,000.

"One of the most encouraging features of the year," Mr. Gable said, "was the healthy and substantial growth of our present industry. These plants have spent or are spending about \$60,000,000 for expansion, greatly adding to their productive capacities and increasing payrolls by the millions." He said the 1954 development created 5,400 new jobs, with added payrolls in excess of \$14,000,000. There were 31 new plants and 63 expansions recorded.

Opening, Picking, Carding & Spinning

A Summarizing Of Fiber Properties

ONE hundred years ago the technique of handling cotton was very similar to what it is today. Ring spinning had been introduced and a fairly satisfactory comber was being used as early as 1850. Since that time the changes in the cotton system equipment have been in the nature of faster or more reliable operation rather than any entirely new method of operation. This relatively constant status quo has given technical people an excellent chance to find out what are the important characteristics of a fiber that allows it to be processed on cotton system equipment.

Along with the cotton system equipment is included

This paper, presented by Neal Truslow, U. S. Rubber Co., at the recent symposium of the Polytechnic Institute of Brooklyn, N. Y., is being presented here in view of its appropriateness with the current series on twisting by Mr. Truslow in this journal.

those modifications that have been made to allow some of the synthetics to be handled. These modifications primarily consist of increasing the spacing between drafting rolls,

but also include the fancy rolls as used on some cards and the circular balloon control devices used on some spinning.

In order to specify exactly what fiber characteristics are important and in order to see why these particular characteristics are needed, it is worthwhile to follow the fiber through the mill from the time the bale is opened until it is shipped out as finished cloth. It must be kept in mind in all of these discussions that processing on the cotton system is very competitive and very cost conscious. If you happen to have a fiber that does not meet the fiber specifications that are given, it is quite likely that you could still find a way to process it, but it is unlikely that such a fiber will become a howling commercial success on the cotton system because of the increased processing cost.

When the bale is opened, the fiber is put through several machines known as opening and picking equipment. This equipment does some cleaning of the fiber and starts pulling the tangled fibers apart so that they are in a loose form that will allow for processing in later stages. At this point we can lay down the first requirements:

(1) *The fiber must be as clean as possible*—Contamination with grease and oil will prevent the opening equipment from operating properly and at times this has been a problem with some of the synthetics and particularly the garnets and some of the imported rayons. Problems with cleanliness are more frequent with the natural fibers and foreign material such as leaf, motes and trash should be kept at a minimum. Actually in recent years with the increased use of machine picked cotton this has become more instead of less of a problem. Finally it is necessary to completely eliminate such contamination as the tar specks and honeydew if the use of that fiber is to grow.

(2) *The fiber must be easily opened*—Tangled fibers cannot be pulled apart by cotton processing equipment without excessive fiber breakage and without causing undue numbers of neps. Hard lumps of tangled fibers have been found in both natural and synthetic fibers and have led to serious mill difficulties in recent years. It is suspected that some of the ginning practices that are currently used are the chief cause of tangled cottons. In the synthetic field, we have noticed that certain producers have frequently shipped bales that are matted and tangled together and which prevent good processing in subsequent operations.

After picking, the next operation is carding in which the fibers are snatched by steel teeth from the mass being fed as a lap. These teeth transfer individual fibers from one revolving cylinder to another until they are straightened and cleaned. Then they are condensed again into a strand. A medium sized card room may have 100 of these machines in it and each machine is handling about 2,400,000,000 fibers per hour. It can be appreciated that carding is a high speed, mass production operation that is not even approached by any other industry. As such, many of the fiber properties become critical and this is the operation where trouble most frequently shows up first.

(3) *The fibers must be the correct length*—Fibers are frequently processed on cotton cards that are as short as one-fourth inch and as long as six inches, but when these extremes are encountered they are present only as a minor constituent of the total fibers. In actual practice the extremes of average fiber length are 0.5-inch to three inches

and both of these extremes can be handled satisfactorily on cotton equipment provided the machinery is adjusted properly for it. At the present time, however, the major quantity of fiber that is handled on the cotton system has an average length of one to 1½ inches. The shortest fibers are unsatisfactory because they do not cling to each other enough to be properly handled. The longest fibers are unsatisfactory because they cannot be untangled or straightened and because they tend to wrap around the processing rolls and get embedded in the wire.

(4) *The fiber must be the correct diameter*—At the present time there are fibers being regularly processed on cotton equipment that are as fine as 0.75-denier and as coarse as 50-denier. However, just as in the case of the fiber length, these outside limits are greater than the range of the average denier being processed. In regard to the latter, I would say that the average denier varied from 1.0 to 16. Both of these extremes can be processed satisfactorily, but the major poundage of fiber processed varies from 1.2 to 3.0-denier.

(5) *The ratio of length to diameter must be correct*—If the fiber is too long for its diameter, it is easily tangled so that neps are formed and the spaces between wires in the card become loaded. A rule of thumb that has been successfully used in the industry is that the staple length must not exceed the denier. This rule has been found to apply fairly well for blends also. Thus a blend of 50 per cent 1.5-denier viscose and 50 per cent three-denier Orlon can be processed satisfactorily with a staple length of two inches but not with a staple length of three inches.

Conversely, if the fiber is too short for its diameter it is difficult to obtain sufficient frictional contact between fibers to allow the card web to hold together or to allow the fibers to be uniformly drafted in subsequent operations. Our experience indicates that the minimum value for this ratio is 0.15. Then the working limits to the ratio of the fiber length in inches divided by the fiber diameter expressed as denier is from 1.5 to 0.15. You will have to excuse my use of mixed numbering systems since I have attempted to use those dimensions which are in most common use by the industry with the hope that industry people can use these concepts and that the scientists can convert them into dimensions that are more easily handled in their computations.

(6) *The elongation must be correct*—As the carding machine operates it carries the fibers at a speed of 15 miles per hour past hooked wire that is essentially stationary. In order to withstand such punishing treatment, the fibers must have a certain amount of "give" or stretch to them. Certain fibers such as glass which have a low elongation are badly broken in this carding operation. At the same time, it has been found that if the fibers have too high a stretch that they tend to embed in the wires and to "load the card." Also it is found that in subsequent drawing operations that the fibers with too high a stretch are so variable in effective length that it is difficult to set the drafting rollers in order to adequately control the movement of the fibers. Our experience indicates that the limits for elongation at break of textile fibers to be processed on the cotton system is from five to 40 per cent.

After being carded, the fibers are processed on the drawing frame where they are blended and arranged in a uniform strand of more nearly parallel fibers. In this operation the fibers are drafted so that as they leave the rolls they are traveling at a rapid speed in the form of a light web. Under

such conditions, if the fibers hold a high static charge their even movement will be hindered, and therefore:

(7) *The fiber must have satisfactory electrical properties during processing*—A good deal of quantitative data has appeared in the literature during the past ten years dealing with static electricity on textiles. It is essential that to be satisfactory the fiber (or the finish used on the fiber) must allow any charges built up to rapidly drain off and it also is desirable to select finishes that will not build up a large initial charge.

The fiber (and the finish used on the fiber) can have their electrical properties as well as their other characteristics affected by the humidity to which they are exposed. When textiles were manufactured 100 years ago, there was little control over the relative humidity, whereas today practically every establishment processing textiles makes some attempt at control. Nevertheless the variations in humidity are considerable and so:

(8) *The fiber should not be adversely affected by humidity changes*—When we take into consideration the large number of different types of operations in the textile industry and when we realize that some fluctuations will occur in all of the controlled humidity systems, it is clear that a satisfactory fiber must be able to perform over a range of humidities. It would be very desirable to have the fibers relatively insensitive to changes between 45 and 70 per cent R.H. Few of the new hydrophobic fibers can meet this condition. However, they can all meet a minimum requirement of performing satisfactorily at humidities of 50 to 65 per cent.

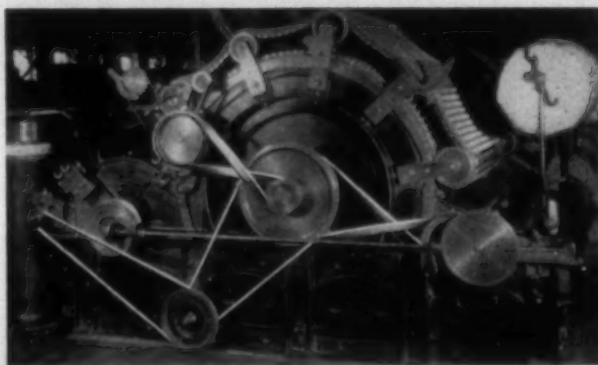
After the drawing operation, the strand is attenuated and converted into roving. In this operation the fiber must meet two opposing requirements:

(9) *The fiber must have a high coefficient of static friction and a low coefficient of dynamic friction*—The fibers must not slip past each other as they are fed into and removed from the drafting zone since that would contribute to an uncontrolled stretch and uneven drafting. The forces that tend to cause the slippage will be fairly large since the strand must support itself from the drawing sliver cans while it is lifted several feet to the top of the roving frame and on leaving the front rolls it is subjected to centrifugal forces and is dragged over a long path until it is wound on the bobbin. In order to withstand these forces the fibers must have a high coefficient of static friction. The limiting values for a successful fiber have not yet been established but it appears that the static friction should have a coefficient of about 0.6.

In contrast to this requirement, it is necessary that the fibers slip past each other quite easily while they are being drafted. This means that the coefficient of dynamic friction should be low and tests indicate that it should have a value of approximately 50 per cent that of the static friction.

The roving is converted into yarn on the spinning frame and in that process the yarn is subjected to high centrifugal forces. At times these forces must be sustained by the relatively few fibers that are twisted at the nip of the front rolls. These forces can break weak fibers and cause the end to come down, therefore:

(10) *The fiber must have a moderately high tenacity*—We feel that any fiber with a tenacity of less than 1.0 gram per denier is so weak that it cannot be handled satisfactorily either in spinning or in other cotton mill operations. During the spinning operation the tip of the traveler may actually



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become red hot. In other operations such as where yarn is being wound tightly on shuttle quills, the parts over which the yarn is running can become very hot. Also during drying and resin curing operations, fairly high temperatures are frequently encountered.

(11) *The fiber must not be greatly deteriorated by short exposure to moderately high temperatures*—We believe that to be satisfactorily processed on the cotton system a fiber must have a sufficiently high melting point so that it does not become sticky at 300° F.

The foregoing requirements summarize what we believe are needed for satisfactory processing through a grey mill. One other requirement would have to be added to this list if we want to also consider the finishing plant:

(12) *The fiber must have satisfactory resistance to wet processing*—For desizing, scouring and dyeing operations it is necessary that the fiber be able to stand up while it is being handled wet. This probably means that the fiber has a wet tenacity of at least 0.5 grams per denier. These dozen

rules for what constitutes an adequate fiber for processing on the cotton system are summarized in the accompanying table.

FIBER PROPERTIES REQUIRED FOR COTTON SYSTEM PROCESSING

	Maximum	Minimum
Contamination	Must be Clean	
Tangled Fibers	Must be Easily Opened	
Length-Inches	3.0"	0.7"
Diameter-Denier	15	1.0
Length/Denier	1.5	0.15
Elongation Per Cent	40	5
Static	High Conductance, Low Charge	
Relative Humidity	70	45
Coefficient of Friction	0.3	0.6
	Dynamic	Static
Dry Tenacity-GPD	—	1.0
Wet Tenacity-GPD	—	0.5
Melting Point	—	300° F.

Warp Preparation & Weaving

Maintenance Of Electronic Control Equipment

By H. A. DAMERON JR., J. P. Stevens & Co. Inc., Greensboro, N. C.

— Before A. I. E. E.-Textile Subcommittee Conference On Electrical Equipment For The Textile Industry —

The growing use in the industry of electronic control instruments has presented a number of problems and/or considerations. This paper presents the correct approach to the proper installation and maintenance of such instruments.

THE textile industry, one of the oldest in the world, has been more or less forced in recent years to make major improvements on all of their mechanical equipment. We have, I must admit, moved at a snail's pace in making our equipment mechanically efficient. For instance, less than ten years ago some of the textile mills in the South were still driving their machinery from a centrally-located steam engine by means of massive pulleys and literally miles of shafting.

When several years ago we heard the first mention of the word electronics, we shied away from it as if it were poison and even today there is a great deal of resistance in many cases to the application of electronic control, simply because there has not been enough education as to what can be done with it. Basically, electronic control equipment using gas-filled or vacuum tubes can take the slightest physical value, such as a beam of light for instance, and convert it into an electric component that can be either amplified or altered and converted back into a physical value of an entirely different characteristic, if need be. We

are using this equipment in our industry today for control because it is faster, more accurate and in many cases, because there is nothing else that will do the job.

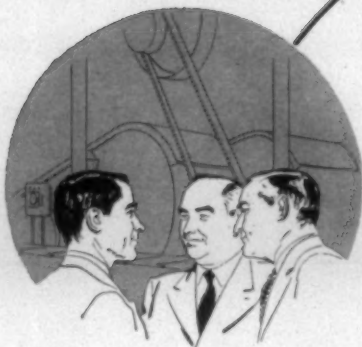
The first responsibility of the owner on installing electronic control equipment is a properly-designed exterior wiring system. The equipment itself should be located so that it is easily accessible for servicing and maintaining. In many cases the equipment is located on ceilings or inaccessible locations that make for poor servicing and maintaining.

Considerable attention should be given to the selection of materials. For instance, on all sensitive circuits with high impedance to ground, low loss shielded cable should be used. Care should also be taken to see that clear identification of cables is provided by the liberal use of the colors available today.

Adequate raceways should be installed in the initial installation, including several spare conductors. This will usually save money in the long run since one of the extra conductors can be picked up later to replace one of the originals.

Care should be given to obtaining a good mechanical layout. The electronic equipment should be located in a clean, well-ventilated, dust-free position if possible. Special attention should be taken to keep the equipment away from vibration and abnormal heat, as both of these can cause considerable trouble.

One of the big problems of our industry today is the



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WARP PREPARATION & WEAVING

training of our personnel. When the average electrician opens his first electronic control panel and sees what he takes to be either a radio or a control for a modern jet, he, in most cases, is very apprehensive of the equipment. From this point on, we have a major training program on our hands. We have approached this in several ways. One, by acquiring simplified textbooks on electronics and by encouraging our men to enroll in correspondence courses with our financial help. Also, we are working on upgrading the type of men we want, and will probably, in order to keep up with the modern trend, acquire technicians instead of strictly electricians to service this type of equipment.

It is hard to determine what is proper maintenance for electronic control equipment. Actually, each installation must be studied and the maintenance must be set up on the basis to keep that piece of equipment in operation. Adequate spare parts should be on hand, especially tubes. We feel that there should be two spare tubes for each tube we have in service at the plant, and to be sure that these tubes are good, the only good test is to actually try these tubes in the equipment in which it will be used. We have seen new tubes in some instances where the characteristics were slightly different, fail to operate satisfactorily upon installation. For this reason, it is wise to pre-test all tubes in the equipment they are to be used in, to be sure they are satisfactory. While discussing tubes it is well to observe the equipment manufacturers' recommendations on hours recommended operation, but it is actually better to keep good records and establish your own frequency of change. Also, where it is impossible to locate the equipment completely free of vibration, it is well to use premium red base tubes, which have a much stronger inside structure to resist failure against vibration.

Visual, Ohmmeter and megger checks should be made at regular intervals, depending upon how critical the operation is. On one very critical operation, we do this once a month. One thing in particular to watch for on the visual inspection is for loose connections. This can cause plenty of headaches and is well worth the time it takes to make the checks.

We believe that since most of the control equipment uses such small amounts of current that it is better to leave the equipment energized over short, shut-down pe-

riods such as week-ends. Many times values will change permanently from temperature changes due to cutting off and on. Also, this allows you to accurately determine tube life.

Sufficient spare parts such as condensers, resistors, etc. should be on hand at the plant because in many cases the equipment is special and should you lose one of these parts it may be several days before you could get it to the plant.

We need better plans of equipment installations from manufacturers. We need to have industry-wide uniformity in drawings, such as symbols, etc. This is gradually being done, but needs to be greatly improved. We feel that every electronic controlled installation should have a tailor-made, simplified schematic drawing of each particular job on one drawing. We have purchased drives on which we received six to 12 different schematic drawings which even we have trouble consolidating into a layout, much less some of our plant electricians. We need also simplified and complete check lists and schematic plans for trouble shooting. Schematic plans should be designed for trouble shooting, showing values of components with proper voltage and resistance reading at critical check points. This has been one of the major handicaps of maintaining electronic equipment in our industry. We realize that the engineer at the factory who laid out the job knew what he was doing, but it would save many a headache if this plea were adhered to.

We feel that the manufacturer should make more effort to simplify and improve equipment. As improvements are made to controls, sometimes no effort is made to eliminate unnecessary circuits, and many times, circuits that are even unused. We believe that if every effort is made to eliminate these unnecessary circuit components which increase cost, and more important, complicate our servicing procedures, the servicing of electronic equipment would be greatly improved.

We would like to see the components for industrial equipment be built for this type service rather than the relatively light designed equipment being widely used today, just as is used in radio and television work. Some of our actual recommendations would be to (1) use sealed plug-in relays, (2) heavier terminal strips for rigid group mounting of resistors, capacitors and other small components, (3) heavier terminal blocks to accommodate 12 or 14 external wirings, since this is about the lightest that we use in the industry and (4) I would like to see improved enclosures, particularly with equipment on hinged brackets for full accessibility to all components while the equipment is in operation.

In many cases when we have called for factory service on electronic equipment, the engineer sent to service our job has no knowledge whatsoever of the particular installation in trouble. Sometimes it is necessary for the man to spend a day getting acquainted with the operation before he can be of any service to us. By sending us men familiar with the particular installation much time could be saved.

We would like to see the electronic equipment manufacturers afford training courses for our personnel. The instrument companies, such as Taylor, Brown and Bristol, have been doing this for several years and it has proven to be very satisfactory. These courses range from two to six weeks in length and have been a tremendous help in training instrument personnel.



Ranson, Winkler, Dameron, Lawrence

Edwin W. Winkler, associate professor of electrical engineering at N. C. State College, is demonstrating a new type of ammeter connector to Russell Ranson of the Edwin L. Wiegand Co., Charlotte, N. C.; H. A. Dameron of J. P. Stevens & Co. Inc., Greensboro, N. C.; and L. F. Lawrence of Minneapolis-Honeywell Regulator Co., Charlotte.

Bleaching, Dyeing & Finishing

New Developments In Cast Stainless Equipment

DEVELOPING from an old "art" to a modern science, the textile dyeing industry is taking full advantage of cast stainless alloys for processing equipment. Dyeing of the new synthetic fibers has introduced new problems, demanding new equipment design specifications. Since nearly all the new fibers are regarded as special purpose, results of dyeing operations must be precise and reproducible. This means that the causes of solution contamination—the primary reason for off shades emerging from successive batches of the same solution—must be eliminated. A basic step in this direction has been the changeover from outmoded equipment construction materials to stainless steel. This has resulted in better dyeing quality control and at the same time reduced the amount of equipment required.

In former years, much dyeing equipment was made of wood. When subjected to the action of the corrosive dyeing liquids, the wood roughened or splintered, thus catching and snagging fabrics. Furthermore, wood absorbed the dye colors, and thus it was not possible to reproduce precisely the same shade in each batch. When nonferrous metals were used, results were not much better, since copper pick-up was a source of contamination of the dyeing liquids. This, plus other corrosion products in the solutions, prevented reproducible colors or color fastness.

Cleaning of dyeing equipment introduced another factor unfavorable to the older materials. A boiling-out process was necessary between the change of dye colors, to keep fabrics free from contamination from previous colors. This operation usually took four or five hours.

With stainless equipment, cleaning now takes about 20 minutes. Furthermore, the surface of stainless can be easily flushed, and requires no boiling-out. Cleansers containing mineral abrasives, and chemical cleaning solutions such as warm five per cent oxalic acid are commonly used. Hot or cold caustic soda in concentrations from five to 15 per cent also are often employed. Nonferrous and wooden equipment could not give satisfactory service life when exposed to these chemical and abrasive cleaning operations.

Stainless steel resists a wide variety of acids, alkalis and salts, commonly associated with dyeing, at temperatures that are well over the upper range of textile dyeing operations. To protect textile fibers from contamination, therefore, stainless construction is being specified throughout modern dyeing equipment.

When stainless equipment is used, tangible savings are immediate. For instance, there is no need for duplicate dyeing set-ups for use with different colors, since stainless equipment can be cleaned completely after each bath is run. In addition, stainless has much greater structural strength than other materials of construction formerly

used. In skein dyeing, stainless provides the necessary strength to hold heavy loads of wet skeins in the dye cage.

For important parts of dyeing equipment the use of stainless steel in the cast form is advantageous. Stainless castings offer equipment manufacturers corrosion resistance and economical one-piece construction. By avoiding assembled constructions, there are no crevices or traps for old dye liquor. Cast stainless components can be easily designed in a streamlined shape which aids in both mechanical and chemical cleaning.

From a group of cast stainless alloys offering a wide range of corrosion resistant properties, the austenitic or "18-8" chromium-nickel types frequently are chosen for their strength, ductility and good fabricating qualities. Of these, four grades are principally used in textile dyeing applications. These are the general purpose CF-8 grade which is resistant to strongly oxidizing acid media; the CF-8M grade which is basically the same type, but containing a molybdenum addition for improved resistance to reducing media and various salts. Where welding is nec-



Fig. 1—Automatic dyeing jig in use for dyeing synthetic fabrics at the Bradford Dyeing Association, Westerly, R. I. The brackets carrying the two small expander-rollers in the foreground are made of stainless castings, type CF-8, by the Van Vlaanderen Machine Co., Paterson, N. J.

essary in equipment construction, the columbium-containing CF-8C type or the special extra-low-carbon alloys are often used to avoid susceptibility to intergranular corrosion. Grade CN-7M, containing both molybdenum and copper, offers the advantage of good resistance to bleaching solutions containing dilute sulfuric acid or chlorides.

Typical Dyeing Conditions

To make a successful selection of construction materials, the design engineer must have exact information on the corrosive environments to which his equipment will be subjected. In a recent talk before the American Association of Textile Chemists & Colorists, A. P. Roy of American & Efird Mills described the characteristics of the solutions used to dye typical modern fibers.

Higher processing temperatures are required for dyeing modern synthetic fibers than for natural fibers. Also solutions contain greater concentrations of acid, and in general are more corrosive to the surrounding equipment. Nylon, a synthetic polyamide, can be dyed with practically any one of the new dyestuffs, giving excellent color depth and fastness. Dacron, a newer polyester fiber, has affinity for fewer color classes than nylon or Orlon acrylic fiber. When treating Dacron, special chemicals and processing conditions are necessary, to give the colors affinity for the fiber. If this affinity were not achieved, the colors would be adversely affected by many conditions, especially heat. To achieve this color stability, processing temperatures of 250° F. are used for Dacron. Dacron can be dyed with both acetate and diazo colors. Typical processes used in dyeing two popular synthetics—nylon and Dacron—are shown in Tables I and II.

Severe environments also exist in dyeing Orlon, Vicara, Dynel and Saran. To meet these conditions, dye equipment



Fig. 2—Combination beam and package machines utilize stainless castings in their construction. (Photo courtesy Gaston County Dyeing Machine Co.)

manufacturers are specifying stainless castings for vital parts of their designs.

Stainless Castings in Package Dyeing Machines

In Stanley, N. C., the Gaston County Dyeing Machine Co. builds textile dyeing equipment especially designed to process modern synthetic fibers (Fig. 2). To meet rigid specifications of corrosion resistance, higher temperatures and higher pressures, Gaston County utilizes cast stainless alloys for their combination beam-and-package dyeing machines; package dyeing machines; and yarn carriers.

The company recommends and uses the CF-8M grade alloy (containing 2.0-3.0 per cent molybdenum) for dyeing machine construction, because it meets the new dyeing conditions. With the dyeing of synthetic fibers still very much in the experimental stage, the range of chemicals that will eventually be employed in this process is unknown, and the use of the CF-8M alloy is an added safety factor for the equipment users.

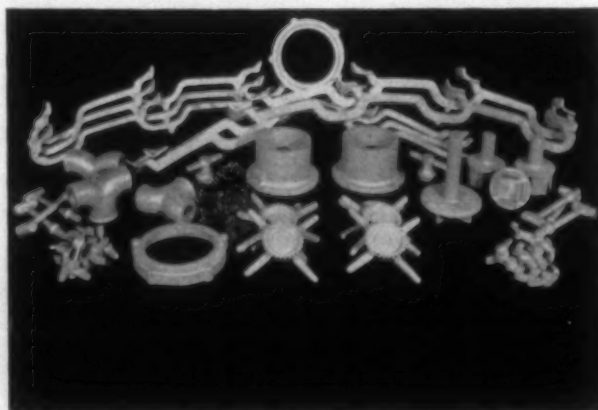


Fig. 3—Typical stainless castings used in the construction of textile dyeing equipment.

Components of Gaston County's combination beam and package dyeing machines, such as the kier lids and kier bottoms, are one-piece stainless castings. In addition, the kier lug rings, hinge stuffing boxes, valves, elbows, pipe nipples and dye pumps are all made of stainless castings (Fig. 3). On the package dyeing machine, kier castings ranging from seven inches I.D. to 66 inches, lid ring, lug ring, leg couplings, sample port assembly, hinge stuffing box assembly, flanges, elbows, dye pump and all valves are stainless castings. Gaston County yarn carrier manifolds range from 17 inches to 6½ inches in diameter, and are all one-piece stainless castings. Casting weights run from 35 to over 900 pounds.

The choice of the CF-8M grade was based on its excellent resistance to many corrosive media. CF-8M allows greater freedom in design for conditions involving high pressures and temperatures. Gaston County recommends alternating a bleaching process with a dyeing process, since some of the dye chemicals neutralize the effects of compounds (such as sodium chlorite), which tend to attack most types of stainless steel. Where dyers insist on continuous processing with chlorine compounds, the company recommends thorough rinsing of the vessels between bleaching cycles. The CF-8M grade effectively resists corrosion by most dyestuffs, and tends to reduce susceptibility to pitting attack by chlorine compounds.

Welded Dye Kettle Components

Another manufacturer of textile dyeing machinery, Smith, Drum & Co. of Philadelphia, incorporates stainless castings into the design of several units. For example, inspection of the underside of the Smith, Drum Package Dyeing Machine reveals that the dye kettle base, pump cover, pump body, elbow and reducer, are all made of high alloy castings (Fig. 4). Cast alloy type CF-8C is used for the kettle base and head and CF-8 is used for the other components.

Two of the most interesting cast high alloy parts are the dye kettle head and base. The base weighs 300 pounds and has a 50-inch maximum diameter, and is made of type CF-8C cast alloy. This one-piece base casting replaces a fabrication made up of a disc head to which flanged openings were attached, and the feet were welded on as separate pieces. The casting is welded to a rolled section, and a similar casting, without feet, forms the head, these three sections thus completing the dye kettle. Operating at pressures up to 150 p.s.i., the entire assembly meets boiler code standards.

Type CF-8C, an alloy containing columbium, is specified because of the welding required in the construction. In austenitic alloys, welding may cause the precipitation of chromium carbides along the grain boundaries, thus reducing the corrosion resistance normally provided by the chromium. The presence of columbium in the CF-8C alloy offers protection against intergranular corrosion because columbium carbides rather than chromium carbides are precipitated. Another method of avoiding chromium carbide precipitation is to use alloys containing extremely small amounts of carbon; such low-carbon-content alloys are now becoming available in the cast form.

Smith-Drum machines are used for both dyeing and bleaching, and the equipment is washed between these operations. Depending on the type of dyeing being done, the time cycles varies from one to four hours. Although the equipment is designed to withstand pressures of 80 p.s.i., normal pressures range from 15 to 30 p.s.i., except for synthetic materials such as Orlon, when pressures reach about 55 p.s.i. Temperatures range from 200 to 250° F., with the higher temperature being employed for synthetic yarn.

The CF-8M is employed to handle corrosion problems stemming from the fixing or bleaching agents. One of the most corrosive solutions handled by the cast stainless parts is hot dilute sulfuric acid at 200° F., having a concentration of about 20 pounds of acid to 600 gallons of water and a pH factor of 3. Peroxide bleaches are generally corrosive, the most severe being the sodium. The CF-8M alloy resists both these types of corrosive action. For more severe sulfuric acid service, the CN-7M grade can often be used to advantage.

These castings do not discolor and do not form corrosion products which might discolor the yarn. Cleaning between batches is simple because of the streamlined shape of the stainless castings. This means that equipment can be changed quickly from dark to light color dyeing.

Dye Jig Enclosure for Synthetic Fabrics

Glasco Equipment Corp., Paterson, N. J., recognized a

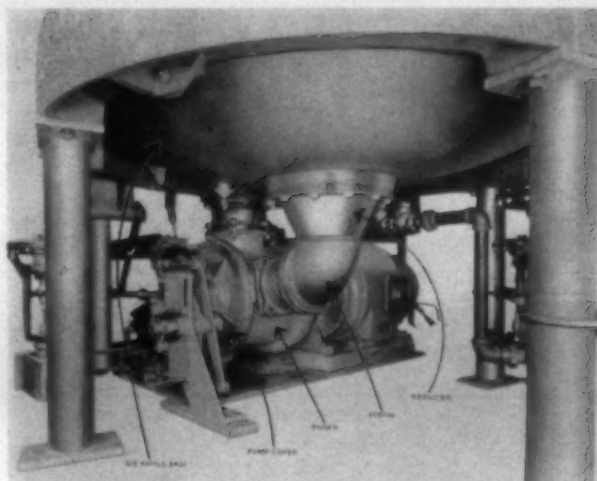


Fig. 4—Underside of package dyeing machine reveals many parts made of type CF-8C and type CF-8 stainless castings. Pump cover, pump, elbow and reducer are made of type CF-8 castings; dye kettle is made of type CF-8C because of the welded construction. (Photo courtesy Smith, Drum & Co.)

long time ago that new machinery problems would develop with the advent of the synthetic fibers. Seeking to provide more even dyeing, better control of mean temperatures, and substantial savings in dyeing time, Glasco developed a new dye jig enclosure for better and faster dyeing of synthetic fabrics.

Girth supports made of cast alloy types CF-8 and CF-8M, and dye reel journal parts made of CF-8 alloy were specified throughout the machine, to assure long service life and resist the corrosion of acids and alkalis used in the dyeing process.

Dye Kettles

A dye kettle being marketed by Riggs & Lombard, Lowell, Mass., incorporates many stainless castings to protect synthetic fibers from contamination. Dyeing of hydrophobic synthetics requires new types of equipment at elevated temperatures, and with this equipment the dyeing cycle time is greatly reduced, penetration and levelness are enhanced, and dye exhaustion is virtually complete. The following parts are specified in type CF-8M cast stainless: bottom plates, cover plates, pipe connections and valves.

TABLE I—TYPICAL NYLON DYEING PROCESS

Run scoured nylon into dyebath at 120 to 140° F.—10 min.
Raise gradually to 200° F.
Raise to 250° F.
Run about 30 min. in bath consisting of 2% diamine scarlet and 1/2% acetic acid.
Finishing baths—20 to 45 min. at 200 to 240° F.—usually include 1% to 4% acetic acid.

TABLE II—TYPICAL PROCESSES USED IN DYEING DACRON (NAVY BLUE)

(A) Acetate Process at 250° F.
Wet—15 min. at 140° F.
0.5% Scouring Agent
Rinse Warm
Dye Bath—Set Bath
5.785% Celanthrene Violet B.G.F.
2.661% Celanthrene Brilliant Blue F.F.S. Conc.

BLEACHING, DYEING & FINISHING

0.372% Acetamine Fast Yellow 4 R.C.

0.5% Detergent

The color is first pasted with a dispersing agent, then diluted with water at 180° F. After complete dispersion, the dye is strained into the machine and temperature raised to 250° F. The dyeing is carried out for 45 min. and finished as follows:

1. Hot wash 10 min. at 200° F.
2. Scour 20 min. at 200° F. with scouring agent
Hot rinse until clear

(B) Diazo Process

1. Wet—10 min. with 0.5% scouring agent.
Rinse at 140° F.

To fresh bath at 75 to 100° F. add 5% Acetamine Diazo Black 3B.

Wet out with 2% Alkanon D.W.

Raise to 200° F. in 15 min.

Raise to 250° F. in 10 min., run one hour

Scour 10 min.—2% caustic soda—160° F.

Rinse 120° F.

2. Add to fresh bath at 75 to 100° F.—2.5% acetamine developer A.D.EX.

Run 45 min. at 200° F.

Drop and rinse 120° F.

3. Diazotize in fresh bath 30 min. at 190° F. with 10% sodium nitrite, 20% sulfuric acid

Drop and rinse at 120° F.

Maintenance, Engineering & Handling

Solving The Corrosion Problem

By W. T. WATSON, Plant Engineer, Judson Mills, Greenville, S. C.

SINCE air conditioning has become a necessity in the manufacture of synthetic fibers in the textile industry, and is no longer the luxury that it was at its inception, many maintenance problems have arisen to plague it. Not the least of these is the matter of corrosion with its many ramifications. Neglect it and trouble is sure to follow.

Corrosion is so complex a subject that it has been assigned a distinct branch of engineering. Basically, of course, it is brought about by the oxygen in water and air. The more water and air that is handled by equipment the greater is the danger of corrosion. At Judson Mills 22 blowers with an air handling capacity of 1,560,000 cubic

feet per minute and 16 evaporative condenser cooling units as well as four refrigeration units make the corrosion potential enormous.

An obvious way of corrosion prevention is the use of corrosion resistant metals. This is expensive and requires careful selection for on occasion they are not as resistant as anticipated. Protective coating is the alternative. The selection of the best coating from among the large number available is indeed a difficult problem particularly because of exaggerated and unproven claims.

Judson Mills, one of the large textile mills of the South, has found Rubalt RA black paint to be an excellent solution to the problem of corrosion associated with air conditioning. This material is based on Parlon chlorinated natural

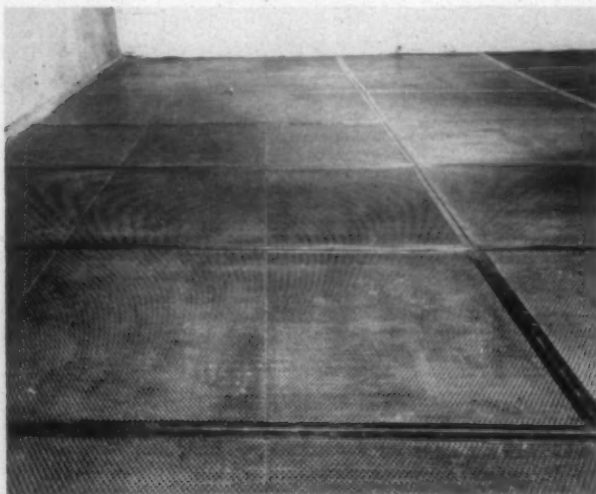


Fig. 1—In the blending room at Judson Mills the wall and floor louvers are coupled in the thermostatic controlled system which blends washed air with return air from conditioned areas—room temperature 51° F., relative humidity 96 per cent. (Photos courtesy Hercules Powder Co.)



Fig. 2—Opposite wall louvers in blending room is this heavy metal baffle plate which traps large particles of dirt and grease as air moves to electric filter.

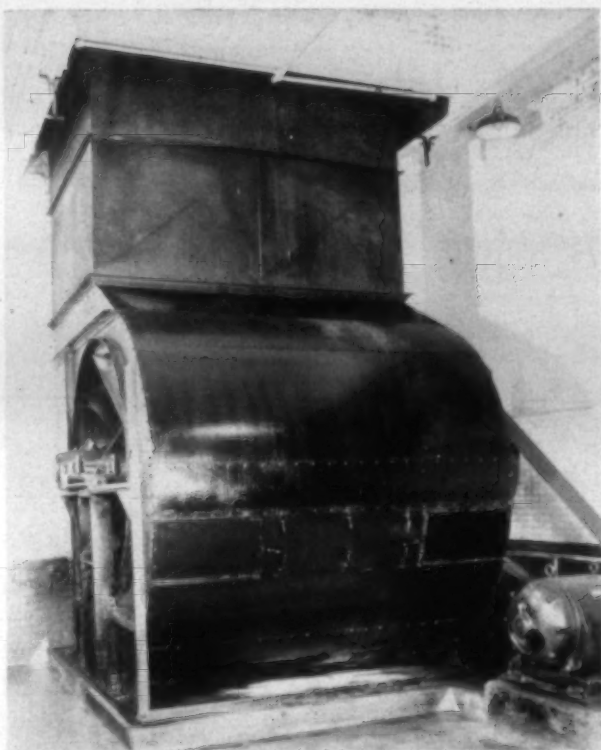


Fig. 3—The giant fan unit which draws air from the washer through an electric filter discharging it to the circulating system is shown here. All metal sections of the air-washer unit and fan are cleaned at intervals of from 18 to 24 months to remove collected particles of dirt and grease. The fan unit is painted with Rubalt RA. There has been no evidence of rust on any parts of the system which are protected by the chlorinated rubber-based Parlon paint.

rubber and an unusual bituminous compound as other necessary modifiers. Parlon is manufactured by the Hercules Powder Co. In appearance Rubalt RA looks much like patent leather. It is a non-oxidizing coating with not only high acid resistance, but excellent alkali resistance as well due to its very low oil content. The water treating chemicals used in air conditioning normally maintain the circulating water as near neutral as changing conditions permit. These chemicals are all alkaline and will remove paints quickly in those areas where the treated water has a chance to evaporate. While evaporation proceeds the water becomes more and more alkaline until diluted again by the addition of more water. These facts show the difficulty involved in maintaining the circulating water at a pH 7 over the entire system.

Ten years ago Judson Mills, one of the Deering, Milliken mills, installed air conditioning with four evaporative condenser cooling units. We have since then added a total of 16 units ranging in size from 45,000 c.f.m. to 185,000 c.f.m. served by four refrigeration units with capacities from 600 to 1,200 tons to cool rooms where more than 2,000 people are working.

Before Rubalt RA black paint was used, when a new conditioning unit was installed, the factory finish flaked off within a few months. The failure of the finish damaged countless yards of fabrics before it was discovered. Since then it has been the practice to use Rubalt RA on the fans, both blades and casings after first cleaning down the metal until it is shiny. Only one coat is applied in ample thickness which deteriorates very little in a year's time. Four

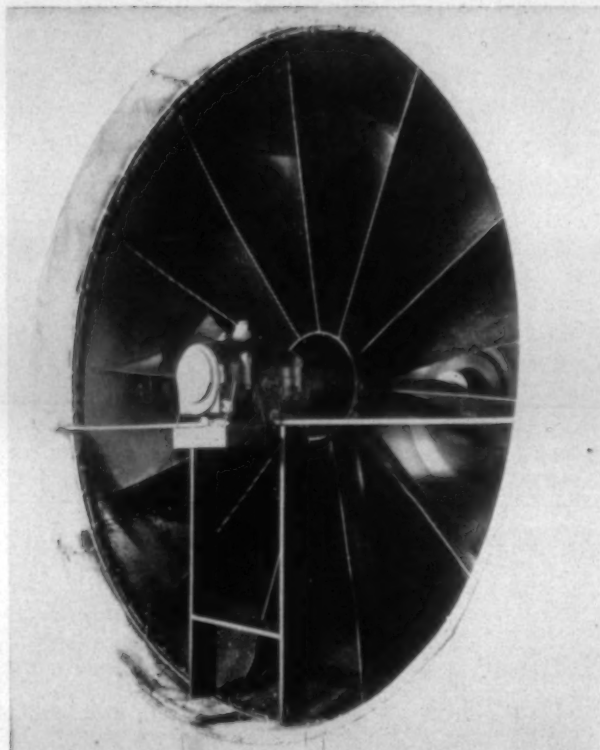


Fig. 4—View of fan blades in air washer unit at Judson Mills, finished with black Rubalt RA, Parlon-based paint. This fan has been constantly in operation for one year at the time photo was taken. Notice the excellent condition of all painted surfaces in fan interior.

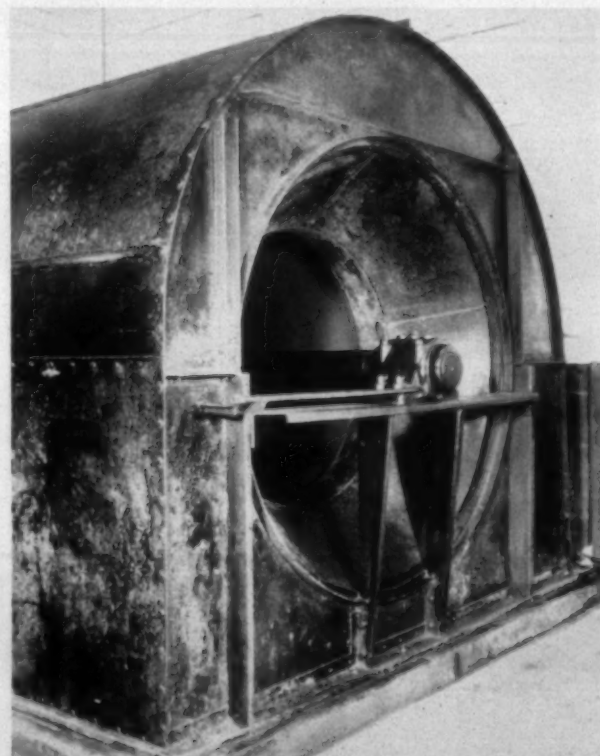


Fig. 5—This is the oldest fan unit at Judson Mills. The fan has been in operation for 20 months without shutdown and was scheduled for cleaning within a few weeks. You can see the collected grease and dirt at various points on the fan casing. There is, however, no indication of a breakdown of the paint finish and the metal continues to be adequately protected. The fan unit has a protective coating of Rubalt RA (Parlon), manufactured by Alfred Hayne & Co. Inc.

MAINTENANCE, ENGINEERING & HANDLING

of our fans have been delivering 130,000 c.f.m. for over ten years; they still appear to be as good as new. Two other fans installed at the same time as the first Judson Mill fan in the same area, but not protected with Rubalt RA, had to be replaced because of severe rusting. Although preventive maintenance is not cheap we find it far cheaper than buying new equipment or risking the loss of fan blades by running them too long without repainting.

The accompanying photographs show the oldest fan unit at Judson Mills. It was installed in 1942 and has been in constant operation ever since except for shutdowns for cleaning and painting. When photographed the fan had been in use for 20 months without shutdown and was due to be cleaned in a few weeks. Although there is dirt and grease on the fan casing there is no indication of a paint failure. This has been prevented by the outstanding adhesion of the corrosion resistant Rubalt RA black paint.

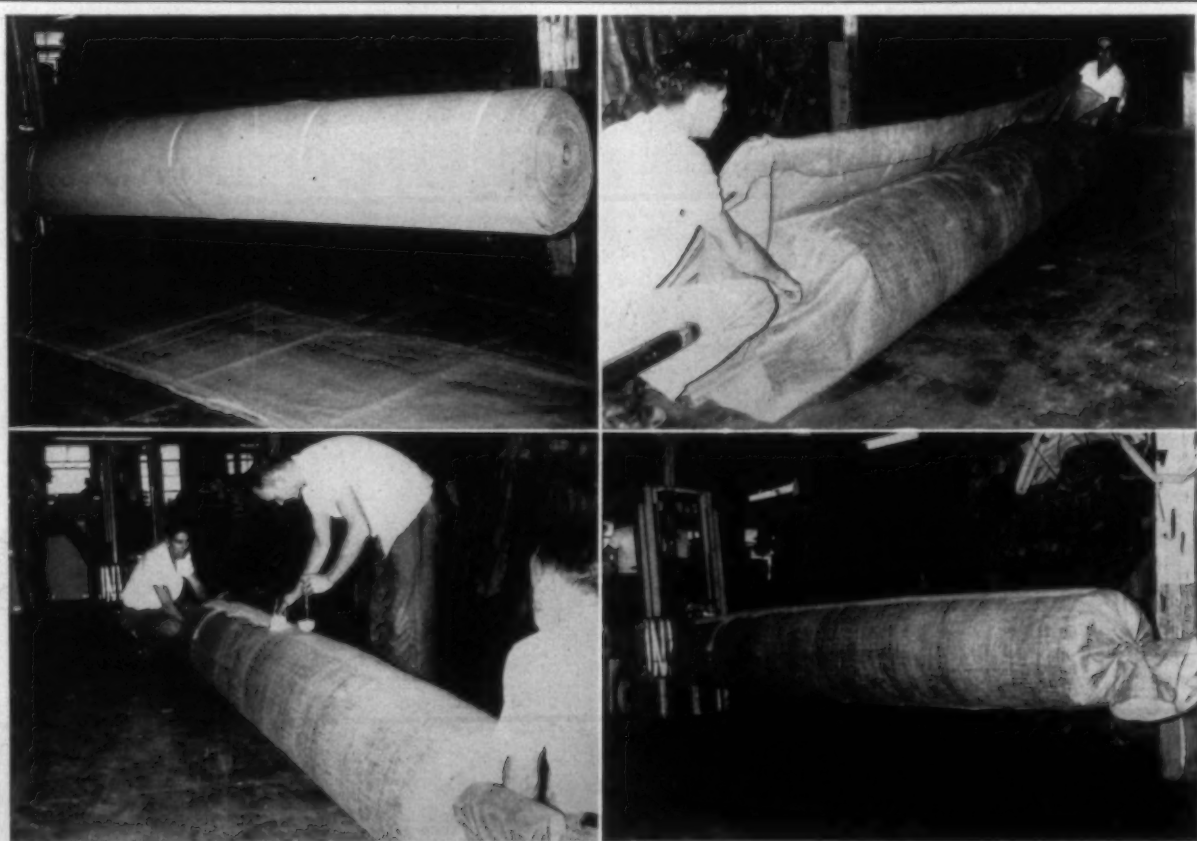
Materials Handling Show To Stress Systems

The 1955 National Materials Handling Exposition, scheduled for May 16-20 in the new exposition hall of the Inter-

national Amphitheatre at Chicago, Ill., will focus special emphasis on new systems of handling rather than on particular single types of equipment as in past expositions. More than 200 companies are expected to participate and their displays will cover some 115,000 square feet of booth space. Along with the show, a materials handling conference will be held to permit visitors to supplement their inspection of machinery with discussions of case histories of materials handling installations in some of the nation's leading plants and factories. The theme for the show and conference is "The Concept of Obsolescence," selected because it emphasizes the rapid out-moding of handling equipment. The event, last held in 1951, is produced by Clapp & Poliak Inc., New York City.

Firms Named On Best Managed List

American Viscose Corp., Cannon Mills Co., Industrial Rayon Corp. and Pepperell Mfg. Co. have been awarded "Certificates of Management Excellence for 1954" in the sixth annual management survey by the American Institute of Management, New York City. They are among the 379 American and Canadian firms receiving the management citation after a continuing study of the operations of thousands of companies, the A.I.M. reports.



A WATERPROOF PAPER-LINED RUG COVER, referred to as a WPPL cover, has been developed by Bemis Bro. Bag Co., St. Louis, Mo., for the shipping and storage of various sized cloth rolls. The cover consists of a layer of burlap and paper laminated together with asphalt. This construction is said to provide a flexible cover that will not break or puncture as easily as a carton. It also provides extra protection against moisture, Bemis reports. It is available in either pre-cut sheets or large wide-width rolls. The pre-cut sheets vary from 60 x 198 inches to 100 x 234 inches. The wide-width material varies from 40 to 100 inches in width. *Top left* photo shows the waterproof paper-lined cover for broadloom carpeting spread on the floor, ready for the lowering of the roll; *top right* shows the cover being wrapped quickly and snugly around the roll; *bottom left*, a latex adhesive is pushed through the pores of the uncoated burlap overlap, forming a very strong seal; *bottom right*, a lift truck fork is inserted into the open end of the roll and moves the roll to either the storage or shipping point where the open end is wired shut. Bemis points out that the simple closure requires one-tenth the time that a carton demands and that a million yards of goods can be stored in the space that would hold only 300,000 yards when the rolls were packed in corrugated containers. The lighter weight of the cover also reduces shipping costs.

Promotions, Resignations, Honors,
Transfers, Appointments, Elections,
Civic and Associational Activities

PERSONAL NEWS



Walter E. Hildick

Walter E. Hildick, former vice-president of Textron Inc. and more recently vice-president of The U. S. Finishing Co., has been named treasurer of Curtis & Marble Machine Co., Worcester, Mass. A graduate of Massachusetts Institute of Technology, Mr. Hildick joined The Kendall Co. in 1929 and was at one time assistant plant manager of the company's Pelzer, S. C., plant. He was also associated with Atlantic Rayon Corp. as works manager when it became Textron Inc.

Hugh Neville Jr. has resigned his position as vice-president and sales manager of the Laminex Corp. of Fall River, Mass., to become the president of the newly-formed Anawan Plastics and Machine Corp. at Fall River. The company will produce reinforced and high impact copolymer plastic products. For the textile industry this will include bobbin boxes, roving boxes, pin boards, dye buckets and pails, dye scoops, reels and spools.

W. H. Morrow, retired vice-president of the Albemarle, N. C., branch of American & Efrid Mills Inc., has been named Albemarle's "Man of the Year for 1954" by the Albemarle Junior Chamber of Commerce. Mr. Morrow had been associated with American & Efrid for 30 years prior to his retirement in 1949.

S. M. Cauble Jr. has been named assistant general manager of the Valdese (N. C.) Mfg. Co. Mr. Cauble was formerly with the R. L. Stowe Jr. textile interests in Belmont, N. C.

Chandler T. White, vice-president of General Aniline & Film Corp., has been named by the company to take over responsibility for industry and trade relations, working with John H. Hilldring, executive vice-president. Dr. C. C. Schulze, production manager at the Linden, N. J., plant, succeeds Mr. White as manager at the Rensselaer, N. Y., plant.

Richard D. Wood Jr. has been named president of George Wood Sons & Co., Philadelphia, Pa., cotton manufacturers, to succeed the late Graham Wood Sr., who died last October. Mr. Wood has been executive vice-president of the company since last August. He has been with the firm 20 years. Graham Jr., formerly assistant to the

president, was named vice-president. Graham Sr. was also president of Selma (N. C.) Mills Inc.

E. E. Jones has been elected vice-president of The United States Finishing Co. He has been manager of the Arnold Print Works Division of Aspinook Corp., subsidiary of U. S. Finishing. J. Haines Spencer will succeed Mr. Jones at Arnold. He has been assistant manager at Arnold for more than four years.

Dr. Paul Seydel, vice-president of Seydel-Woolley & Co., Atlanta, Ga., is a member of an Arctic expedition group planning a trip to the Polar region in March. The group, using an experimental plane similar to the flying wing, hopes to perfect an instrument to gauge thickness of Arctic ice and determine its suitability for plane landings.

John M. Akers has been elected president of Akers Motor Lines Inc., Gastonia, N. C., succeeding his brother, W. W. Akers Jr., who has moved up to chairman of the company's board of directors. John M., as vice-president and general manager, has been in charge of the business.

William H. Cobb Jr. has been named sales manager of Cordura high tenacity rayon. Mr. Cobb was formerly a salesman in the rubber industry sales section and replaces Howard P. Brokaw, who was named assistant manager of industrial sales recently.

George Volckhausen has been appointed assistant sales manager of the textile division of Owens-Corning Fiberglas Corp. Mr. Volckhausen was formerly assistant manager of the company's New York sales branch.

Donald R. King has been appointed credit manager of Industrial Rayon Corp. Mr. King was formerly a credit representative for the company. Before coming to Industrial Rayon, he was a divisional credit supervisor for The White Motor Co.

W. Basil Hill has joined Mooresville (N. C.) Mills in a new creative capacity as vice-president in charge of product development. For the last six years Mr. Hill has been plant manager of the Abbeville (S. C.) Mills Corp., a division of Deering Milliken. Prior to that he was associated with Callaway Mills Co. and the Goodyear Tire & Rubber Co.

C. Ellis Spencer, financial secretary of Crompton & Knowles Loom Works, Wor-

cester, Mass., has retired after nearly 35 years with the company. Mr. Spencer joined the firm as controller in 1920. He was named financial secretary in 1953. He also was a director, treasurer and clerk of Hutchison Avenue Co., Charlotte, N. C., a subsidiary.

Maurice E. Fischer has been named president of United Factors Inc., succeeding A. Harry Feldman, who has become chairman of the board. Mr. Feldman is also vice-president and director of United Merchants & Manufacturers Inc., of which United Factors is a subsidiary. Mr. Fischer has been with the U. M. & M. organization 26 years. Named as vice-presidents of the firm were Arthur Ochs Jr., Richard S. Fuld and Alexander Slater.



T. Holmes Floyd

T. H. Floyd, division manager of Opelika (Ala.) Mfg. Corp., has been named a vice-president of the company. The company has plants at Opelika and at Hawkinsville, Ga. . . . Herbert B. Snower, treasurer and vice-president at Opelika, has been named president to succeed Charles L. Cohen. Mr. Cohen has been named chairman of the board.

Robert F. Sambleson has been appointed manager of the electric blanket mill of Fieldcrest Mills Inc., Spray, N. C. Mr. Sambleson, formerly manager of Specialty Heating Equipment for the General Electric Corp., succeeds J. G. Commins, who has resigned.

Paul H. Medling has been appointed general manager of manufacturing of Sidney Blumenthal & Co. Inc., with headquarters at Rocky Mount, N. C. Mr. Medling was formerly vice-president of Goodall-Sanford Inc.

Celanese Corp. of America has announced a number of recent changes in personnel assignments. They include appointment of Ralph H. Balch as manager of the Hopewell, Va., plant, who succeeds the late Joseph Greiner. Mr. Balch joined Celanese in 1931 and was employed at the Cumberland, Md., and Staunton, Va., plants before moving to Hopewell in 1953. . . . John W. Brooks has been appointed merchandising manager of the textile division, in which capacity he will assist John Holmes, vice-president in charge of merchandising. Mr.

PERSONAL NEWS

Brooks, formerly vice-president and general sales manager of Spring Mills Inc., assumed his new duties the first week of January. . . . Charles E. Babst, manager of production planning, recently completed 30 years of service with Celanese. He has been with the Charlotte, N. C., office since March 1953. . . . U. Chester Whelchel has been promoted to special assistant to the vice-president and general manager of the textile division. He had been office manager of the Charlotte office since November 1952. In his new assignment, he will represent the textile division in its local public and civic relations activities; liaison with state, county and city agencies; promotion of good-will in Southern textile communities; and will assist the general manager as directed.

J. Spencer Love, chairman of Burlington Mills Corp., has been elected chairman of Pacific Mills, control of which Burlington recently acquired. Henry M. Bliss, president and director of Pacific, has resigned his post and has been nominated to the Burlington board of directors. J. Neal Dow, executive vice-president of Pacific, succeeds Mr. Bliss as president. . . . J. Edmund Bradley has retired as a director and vice-president of Pacific and will continue with the company in an advisory capacity.

Everett C. Drake has been named vice-president and director of all M. Lowenstein & Sons' cotton mills. Mr. Drake, who has been an assistant vice-president in charge of the New York division of all the firm's gray mills since 1949, has been with the company since 1946 when Lowenstein acquired Huntsville (Ala.) Mfg. Co. He had been

paymaster at Huntsville about eight years when the acquisition was made. He is also vice-president and director of Wamsutta Mills, New Bedford, Mass.

Robert F. German has been elected secretary of Charlottesville (Va.) Woolen Mills Inc. Mr. German has been with Charlottesville since 1951 as assistant to the late secretary-treasurer, Archibald Lammey, who died Nov. 28. . . . Herbert J. Smith Jr. was elected treasurer in addition to his duties as president.

Joseph H. Easley, assistant general manager, and Jay J. Adams, superintendent of Rock Hill (S. C.) Printing & Finishing Co., subsidiary of M. Lowenstein & Sons Inc., have been appointed vice-presidents for the firm.

L. W. Bishop, formerly director of the research, planning and development board for the state of South Carolina, has joined the staff of Wachovia Bank & Trust Co., Charlotte, N. C. Mr. Bishop, formerly a banker, has been named to a key position in the correspondent banking division of Wachovia. He was president of the Hunt Loom & Machine Works Inc., Greenville, S. C., from 1950-52.

W. Harvey Maguigan has been appointed assistant manager of the Chesterfield Plant of National Aniline Division, Allied Chemical & Dye Corp., Hopewell, Va. Dr. Maguigan has been with National Aniline since 1940, and for the past five years he has devoted much of his attention to the field of industrial relations. He has been succeeded as superintendent of industrial and public relations at the Chesterfield Plant by W. O. Edwards. Mr. Edwards had been personnel supervisor at Hopewell since December 1953.

Dr. R. L. Bateman, manager of the fine chemicals division of Carbide and Carbon Chemicals Co., a division of Union Carbide and Carbon Corp., has been appointed to a newly-created position as director of product development. In this new capacity, he will work with John A. Field, who was recently made vice-president in charge of sales development and related activities. . . . W. A. Woodcock succeeds Dr. Bateman as manager of the fine chemicals division.

Samuel B. Roberts has been elected a director of Lockwood Greene Engineers Inc., New York City, Boston, Mass., and Spartanburg, S. C. Early last year, Mr. Roberts joined the firm at its New York office. As project manager, he is directing the layout and design of major industrial operations for the firm.

Douglass Lindsay has been appointed sales representative in the state of Virginia for The Fairbanks Co., Rome, Ga., replacing Charles W. Freeman, who has been transferred to Georgia. Both represent the entire Fairbanks line of casters and wheels, two-wheel and platform hand trucks, bronze and iron body valves and Dart union and union fittings.

Ben Sumner of Rutherfordton, N. C., was recently awarded the Foreman's Cup for being the most outstanding foreman of Spindale (N. C.) Mills Inc. for 1954. The

cup, which is awarded annually, was presented to Mr. Sumner by Charles N. Reynolds, vice-president and general manager of Spindale Mills, at a pre-Christmas dinner meeting attended by foremen of the plant.

Howard S. Fletcher, vice-president of Crompton-Richmond Co. Inc., has announced his retirement from active business after 20 years with the firm. Mr. Fletcher has been vice-president of new business for the firm since 1946.



James S. Hamer

James S. Hamer has been named sales representative of the Graton & Knight Co., Worcester, Mass., for the territory covering west central Tennessee and Kentucky, northern Arkansas and Mississippi, and southern Indiana. Mr. Hamer was formerly industrial sales representative for Keith-Simmons Co., Nashville, Tenn. He will make his office in Nashville.

Cecil F. Adamson, assistant controller, Burlington Mills Corp., Greensboro, N. C., has been elected to membership in the Controllers Institute of America. Established in 1931, the institute is a non-profit organization of controllers and finance officers from all lines of business. The total membership exceeds 4,300.

Richard G. Conant, chairman of the board of Wellington Sears Co., has retired after 29 years with the company. Mr. Conant joined Wellington Sears in 1925 to take charge of merchandising the products of Samoset Cotton Mills, Talladega, Ala. Three years later, he moved to the firm's New York office, and was placed in charge of sales of all converted fabrics. He became vice-president of the company in 1941, a director in 1944, president in 1945 and chairman of the board in 1952. Mr. Conant continues on the West Point Mfg. Co. board of directors. He has also served as a director of the following companies: Wellington Mills Inc., Anderson, S. C.; Dixie Mills Inc., LaGrange, Ga.; Equinox Mill, Anderson, S. C.; Columbus Mfg. Co., Columbus, Ga.; Cabin Crafts Inc., Dalton, Ga.; Lanett (Ala.) Bleachery and Dye Works; and New England Bunting Co., Boston, Mass. Mr. Conant plans to divide his retirement time between travel and his homes in Ridge-wood, N. J., and Southport, Me.

Robert A. Smith has been named head of the newly-formed spinning division and William W. Bowman has been chosen head of the new staple technical sales division at the textile research department of American Viscose Corp. at Marcus Hook, Pa. These changes in organization will enable the department to further step up effectiveness in technical sales to customers and service to Avisco rayon and acetate plants, as well as broadening and deepening the department's textile research and development program. Mr. Smith has taken over operation of what were formerly the woolen, worsted and cotton divisions. A graduate of the Philadelphia Textile Institute, he joined American Viscose in 1940 as head of the worsted



Self, Grier, Lee

THE SOUTH'S HALL OF FAME FOR THE LIVING recently inducted F. E. Grier, president and treasurer of The Abney Mills and chairman of the board of Erwin Mills Inc., for his phenomenal achievements as one of the nation's most outstanding industrial, banking, civic and church leaders. Mr. Grier was formally inducted at the annual banquet meeting of the Greenwood, S. C., Chamber of Commerce. A distinguished service citation was presented him by James C. Self, president of Greenwood Mills, and Col. Hubert F. Lee, editor and founder of *Dixie Business Magazine* which sponsors the Hall of Fame and Man of the South honors each year. J. Spencer Love, chairman of the board of Burlington Mills Corp., Greensboro, N. C., was also named to the Hall of Fame.

division. He is a member of Phi Psi textile fraternity, American Association of Textile Technologists, American Society for Testing Materials, and a trustee of the Philadelphia Textile Institute. Mr. Bowman will have charge of staple technical sales work, including all contacts with the company's plants and pilot plants on commercial production. He and his staff will be known as the staple technical sales division. Prior to joining American Viscose in 1940 he was associated with Continental Mills.

George H. Mason, president of the Her-mas Machine Co. of Hawthorne, N. J., has retired after 40 years with the firm. A co-founder of the firm, he has been succeeded by George P. Mason. . . . Robert Simpson, sales representative for the company in the New England and Middle Atlantic states, has been elected secretary and promoted to general sales manager for the firm.

Ellis H. Peniston, president of Arnco Mills, Newnan, Ga., and Julian Hightower, president and treasurer of Thomaston (Ga.) Mills, have been named new directors to the advisory board of the Citizens & Southern Bank, Atlanta, Ga.

The Daniel Construction Co. of Greenville, S. C., and Birmingham, Ala., has recently set up two additional offices and made changes in their corporate officers effective Jan. 1. Charles E. Daniel of Greenville, president and founder, becomes chairman of the board, and is succeeded as president by his brother, R. Hugh Daniel of Birmingham, who will now hold the offices of president and treasurer. C. A. Thrasher will continue as vice-president and chief engineer. H. M. Daniel will remain in the position of executive secretary. Carl G. England has been appointed vice-president and manager of the Greenville office; J. A. Dantici, vice-president and manager of Daniel Construction Co. of Alabama with offices in Birmingham while H. L. Longcrier will be vice-president and manager of Daniel Construction Co. of Virginia, a new division, with offices at Richmond. Harry J. Stellman will serve as manager of the other new branch—Daniel Construction Co. of Florida with offices in Jacksonville.

Paul H. Medling has been named general manager of manufacturing for Sidney Blumenthal & Co. and will make his headquarters in Rocky Mount, N. C.

Charles W. Parker Jr. has been named manager of the Richmond, Va., district of the general machinery division of Allis-Chalmers Mfg. Co. Mr. Parker, a representative in the Richmond office since 1948, succeeds Charles L. Crosby, who died Dec. 8. He is an electrical engineering graduate of Virginia Military Institute and a member of the American Institute of Electrical Engineers.

Dr. James T. Eaton, head of research at E. F. Houghton & Co., Philadelphia, Pa., has been appointed assistant director of plants. He will continue to head research. Dr. Eaton fills a position left vacant by the death of Dr. Richard H. Patch, who was also vice-president and board member. He will be assisted by Dr. Kurt C. Frisch, formerly supervisor of organic research, who

has been named assistant manager of research. Dr. Ellis Abrams, formerly with Quaker Chemical Products, succeeds Dr. Frisch.



T. C. Smotherman

man has been promoted to the office of vice-president and sales manager of American & Efrd Mills Inc., Mt. Holly, N. C. Mr. Smotherman was formerly assistant vice-president and sales manager of the company's sales yarn division. He was appointed to that post last Summer.

William H. Cobb Jr. has been appointed sales manager of Cordura high tenacity rayon by Du Pont's textile fibers department. Mr. Cobb, formerly a salesman in the rubber industry sales section, replaces Howard P. Brokaw, who has been promoted to assistant manager of the department's industrial sales. Mr. Cobb has been with Du Pont since 1947 and has been connected in various capacities with the sale of rayon since 1949.

Gilbert E. Goheen, formerly director of research and development of the J. T. Baker Chemical Co., has joined the staff of the Southern Utilization Research Branch of the U.S.D.A. Agricultural Research Service, New Orleans, as assistant chief of the branch. Dr. Goheen will assist Dr. C. H. Fisher, chief of the Southern branch, in the

planning and direction of the broad and complex research program of the branch, which comprises the research laboratory at New Orleans and six field stations. Dr. Goheen received his doctorate in chemistry from the University of Iowa in 1938. His career includes four years as a research associate with the Sun Oil Co.; then ten years with the General Aniline and Film Corp. as an assistant to and finally associate director of research. He has been director of research and development at Baker Chemical Co., Phillipsburg, N. J., for more than two years prior to coming with the Southern branch.

C. M. Flint of Philadelphia, Pa., has joined the consulting engineering firm of Chas. T. Main Inc., which has offices at Charlotte, N. C., and Boston, Mass. Mr. Flint, a widely-experienced engineer, will divide his time between the two offices of the firm.

Robert R. Alexander has been named associate research chemist in the chemistry department of the research and development division of Callaway Mills Co., LaGrange, Ga. Mr. Alexander, recently separated from the Army, was formerly associated with the research and development division of Collins & Aikman Corp., New York City. A native of Vermont, he is a graduate of the Philadelphia Textile Institute.

William A. Rhyne, an assistant to the superintendent of the Firestone Textiles Division of Firestone Tire & Rubber Co., Gastonia, N. C., is being transferred to Sao Paulo, Brazil, as assistant to the plant man-



Erwin, Greer, Priester, Rainey
Brown, Wigington, Cox, Colby, Gentry

HONORARY DEGREES were recently awarded by the Clemson College Chapter of Phi Psi, national honorary textile fraternity, to six men at ceremonies at Clemson. Receiving degrees were William J. Erwin, president and treasurer, Dan River Mills, Danville, Va.; W. Jack Greer, president, Texize Chemicals Inc., Greenville, S. C.; A. U. (Buck) Priester, vice-president and general manager of HDV Division of Callaway Mills, LaGrange, Ga.; Dr. William Thomas Rainey Jr., associate professor of textile chemistry and dyeing at Clemson; Ellison S. McKissick, chairman of the board of Alice Mfg. Co., Easley, S. C. (who was unable to attend the ceremonies); and Walter Cox, assistant to the president and director of public relations and alumni affairs at Clemson. Mr. Cox is shown receiving his degree from Willard A. Colby, Emory Industries, Charlotte, N. C., vice-president of the grand council of Phi Psi. Looking on are Dr. Hugh M. Brown, dean of the Clemson School of Textiles, and David Gentry, president of the Clemson Phi Psi Chapter.

ager there. He is scheduled to leave for South America about June 1. . . . Henry L. Wilder, quality control department, who has been with the company since 1953, has been transferred to the office of William A. Karl, president of the company's textile division, at Akron, Ohio.

Charles H. (Chuck) Connor Jr., Southeastern sales manager for the corn starch department of Anheuser-Busch Corp., has been elected president of the Charlotte (N. C.) Textile Club. Mr. Connor succeeds Frank Barrie of Universal Winding Co. . . . Other officers elected include Lanier Branson Jr. of the Branson Co., first vice-president; Jack Kissiah, Clark Publishing Co., second vice-president; and Demont Roseman Jr. of Fairchild Publications, secretary-treasurer.

J. Harold Lineberger, Belmont, N. C., textile industrialist, has been named North Carolina chairman of the 1955 Crusade for Freedom, the fund raising agency for Radio Free Europe.

G. H. Emory has been elected vice-chairman of the board of Riegel Textile Corp. and William E. Reid has been named president of the corporation. Mr. Emory, who joined the firm in 1933, was elected president in 1953, and in his new capacity he will remain active in all the company's operations. Mr. Reid joined the organization in 1939 as superintendent of the finishing plant at Trion, Ga., and, in 1941, he was made assistant general manager of that divi-

sion. He was transferred to the New York office as assistant sales manager in 1947, and in 1950 he was named a vice-president in charge of sales. He has been executive vice-president of the corporation since November 1953.

Morgan S. Canteley has been elected secretary of West Point (Ga.) Mfg. Co., succeeding Edgar L. Henderson Jr., who will continue to serve as controller of the company and its subsidiaries and devote his full time to the increasing demands and broader responsibilities of this position. Mr. Canteley has served as a legal counsel for the company since 1946.

OBITUARIES

Charles Belknap, 74, retired president of Monsanto Chemical Co., died Dec. 29 at St. Louis, Mo. Mr. Belknap was president of Monsanto from March 1943 to October 1945, and continued as chairman of the executive committee until his retirement Oct. 1, 1946. He is survived by his widow and a brother.

C. Langdon Cheves, 42, vice-president of Daniel Construction Co., Greenville, S. C., died in an automobile wreck near Greenville Jan. 3. Widely known in the textile industry, Mr. Cheves had been associated with much of the company's new textile construction in the South. On the day of his death he had been named by the com-

pany to head sales for all Daniel branches. Surviving are his widow, mother, a daughter, three sons, a sister and a brother.

Charles L. Crosby, 61, manager of the Richmond, Va., district office of the general machinery division of Allis-Chalmers Mfg. Co., died recently. Mr. Crosby had been with Allis-Chalmers since 1923 and had been manager of the Richmond office since 1940.

Richard Nathaniel Fickett, 90, who organized the Whitehall (Ga.) Mills, died Dec. 29 at Athens, Ga. Mr. Fickett, a native of Atlanta, had been associated with Whitehall since its founding and was at one time chairman of the board. Surviving are his widow, two sons, three sisters and a grandson.

William M. Moore, 66, retired mill superintendent, died recently at Blacksburg, S. C. Mr. Moore had been superintendent of Broad River Mill, Blacksburg, and Musgrove Mills, Gaffney, S. C., from 1926 to 1952. Prior to that he was superintendent of the old Globe Mills of Gaffney from 1914 to 1926.

James E. Skane, 63, an engineer and executive of the Manhattan Rubber Division of Raybestos-Manhattan Inc. of Passaic, N. J., died Dec. 15. A native of Oldham, England, Mr. Skane had been with the firm 34 years. As a laboratory rubber specialist, he had accomplished considerable work on textile improvements.

MILL NEWS

CONSTRUCTION. NEW EQUIPMENT. FINANCIAL REPORTS. CHARTERS, AWARDS. VILLAGE ACTIVITY. SALES AND PURCHASES

CENTRAL FALLS, N. C.—Klopman Mills Inc. has begun construction of a 14,000 square foot addition to the Central Falls weaving plant. Completion of the office and manufacturing area is expected by June 1. The addition will not affect plant output, it is said, but will increase total floor area about ten per cent. The plant was leased from Burlington Mills Corp. several months ago.

LAGRANGE, GA.—Callaway Mills is transferring its scatter rug operations from its Valway Plant to the Calumet Plant in a move to attain greater efficiency. The entire production of the Calumet Plant will be given over to scatter rugs, it is understood. S. P. Rice has been named general superintendent of the Calumet and Valway Plants and John M. Blackman will be superintendent of Calumet.

JOANNA, S. C.—Joanna Cotton Mills Co. has announced plans to spend \$300,000 on new construction and machinery to modernize its spooler room. Contract has been awarded to Fiske-Carter Construction Co. for a 75 x 108-foot, two-story addition to the plant. Completion is expected in May. Five Model D spoolers and four warpers are being purchased from Barber-Colman Co. to replace the present Type A units. Installation is expected to be completed by next Fall.

KINGS MOUNTAIN, N. C.—Mauney Mills Inc., Sadie Cotton Mills, Bonnie Cotton Mills Co. Inc. and Mauney Hosiery Co. Inc., all of Kings Mountain, and Nuway Spinning Co. Inc. of Cherryville, N. C., have announced establishment of a company-paid employee profit-sharing plan, effective as of the year 1953. The five mills are all in the Mauney textile group. W. K. Mauney Sr. is president of Mauney and Nuway; R. L. Mauney is president of Sadie; D. C. Mauney is president of Bonnie; and W. K. Mauney Jr. is president of the hosiery firm. Terms of the plan provide that an employee becomes eligible to share in the benefits after he has completed three consecutive years of employment. Under the provisions, no employee will lose benefits due to sickness, temporary disability, leave of absence or for military service. Booklets, summarizing details of the plan, have been distributed to all employees of the five companies.

LUMBERTON, N. C.—Caledonia Mills Inc. has instituted with the consent of the Textile Workers of America, C.I.O., a restyling program which involves a change of fabrics and workloads. The restyling program is said to be the result of a union denial of the company's request for an eight per cent reduction in pay. With the union pledging full co-operation, the mill has begun a conversion to lighter print cloths on

a two-shift experimental basis. About 350 employees are engaged in the program, compared with a regular work force of about 400.

BELMONT, N. C.—Piedmont Processing Co., here, has established its first New York office and has named Carroll L. Blomgren as manager. Mr. Blomgren, with headquarters at 93 Worth Street, will be the company's sole representative in New York, New Jersey, New England and part of Pennsylvania.

CHESTER, S. C.—Col. Elliott Springs, president of The Springs Cotton Mills, has announced plans for the construction this Spring of a modern swimming pool and bathhouse at the Springmaid Golf Club here. Details of the type or cost of the installation have not been made known, but it is expected that the pool and bathhouse will be similar in many respects to those in Fort Mill, Lancaster and Kershaw.

MEMPHIS, TENN.—Kroehler Mfg. Co., Naperville, Ill., furniture manufacturer, has organized a wholly-owned subsidiary, Kroehler Mfg. Co. of Tennessee Inc., here, to mix, blend and warehouse cotton fibers for the company's upholstered furniture lines. The new operation was established in order to give the company an improved control over the quality of cotton felt used in the production of its upholstered furniture.

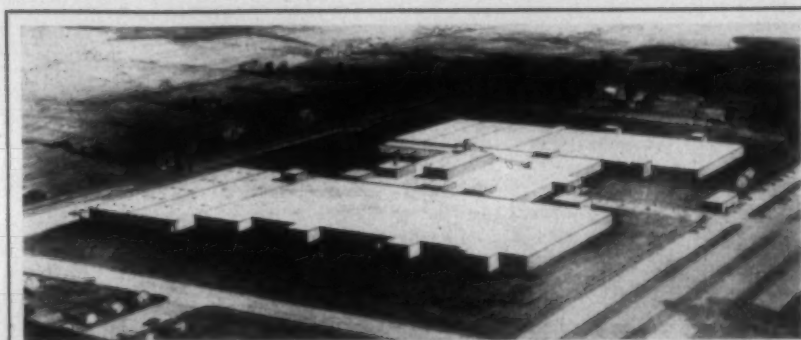
it is said. The plant, representing an investment of some \$275,000, will contain approximately 47,500 square feet of floor space.

WALTERBORO, S. C. — A conveyor belt manufacturing plant containing some 40,000 square feet of floor space will be built here at an estimated cost of \$350,000. The plant will be built for Alston Mfg. Co., Philadelphia, Pa., and James Dunn Mfg. Co., Walterboro. The latter company will be the operator. It will be of one-story design and contain a weave room with 34,000 square feet of floor space.

JAMESTOWN, N. C. — Oakdale Cotton Mills, here, has established a scholarship at the University of North Carolina's School of Nursing for Jamestown High School girls. The scholarship, with a stipend of \$500, is available for the 1955-56 session and will be renewed if the holder qualifies for continued study up to the full four years. Established through the State Medical Foundation, the award will go to a girl of the senior class of the high school who is in the upper half of her class, scholastically.

MOORESVILLE, N. C. — Chemspun Yarns Inc., Brooklyn, N. Y., is reportedly negotiating for construction of a 40,000 square foot building here to replace its Northern plant.

NEW YORK, N. Y. — Royal Little, chairman of Textron Inc., recently voiced optimism about consummation of the proposed merger of American Woolen Co. and Robbins Mills into Textron to become a consolidated operation to be known as Textron American. He noted that some opposition is expected from minor stockholders, but he pointed out that the companies had no economic alternative. The merger plan, already approved by directors of the three companies, will come up for decision at special stockholders meetings next month.



AN ARCHITECT'S PERSPECTIVE of the new \$10 million denim mill that Cone Mills Corp., Greensboro, N. C., has announced it will build at San Marcos, Tex. The plant is expected to have a floor area of some 600,000 square feet. Machinery will include 1,080 looms and 42,000 spindles. Some 1,100 persons will be employed. The plant site is located about two miles northwest of San Marcos on the Missouri-Pacific Railroad.

The Textron meeting will be held Feb. 7 in Providence, R. I., and the American Woolen and Robbins meetings will each be held in New York City Feb. 17. Once formed, Textron American would be dominated by Southern-oriented executives. Mr. Little would be chief executive officer and Robert L. Huffines Jr., president of Robbins, would be second in command as president. The post of chairman of the executive committee, assigned to former Gov. Joseph B. Ely, now president of American Woolen, would be "relatively honorary," according to officials of the companies.

HICKORY, N. C. — Operations have started in the new rayon yarn unit of Shuford Mills Inc. The unit employs 60 persons and produces yarn on cones for the rug industry.

KANNAPOLIS, N. C. — Cannon Mills Co. recently made a gift of 1,800 shares of Class B common stock to Cabarrus (County) Memorial Hospital. Income from the stock will be used to help finance the training of nurses. Among the benefits will be the estab-

lishment of six scholarships to be awarded each year to freshmen students to cover their tuition while they are in Cabarrus Memorial's school of nursing.

CLEVEDALE, S. C. — The merger of Bishopville (S. C.) Finishing Co. and Fairforest Co. finishing division, here, has officially been recorded at the office of the Secretary of State at Columbia. Fairforest is the surviving company and becomes a \$2,100,000 concern with the combined capitals. The merged firms will use the by-laws of the Fairforest firm and the Fairforest directors and officers will serve the new company. J. M. Reeves is president.

GROVER, N. C. — Plans for construction of a building of about 14,000 square feet and negotiations for purchase of a tenter frame and piece dyeing equipment have been announced by Minnette Mills Inc., here. The new structure will be erected by J. S. Mitchum of Shelby, N. C., on property adjoining the present Minnette plant. Completion is expected by July 1. The plant now operates one tenter frame.



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A HANDBOOK OF TWISTING

By NEAL TRUSLOW, Superintendent of Product Development, United States Rubber Co., Winnsboro, S. C.

— Chapter Four, Part Three (Effect of Twist on Strength) —

A NUMBER of attempts have been made to calculate the effect that twist has on the stretch of yarns made from staple fibers. Platt has attacked the problem in a semi-empirical manner in which he obtains a correction factor for the binding power of the twisted strand. The strength of the strand at various twists can then be calculated using the same line of reasoning and the same type of formula that has been described previously for filament yarns. This method shows fairly good agreement with actual results, but the technique is tedious to use. One of the most valuable conclusions that can be reached from Platt's work is that with twists slightly in excess of the optimum twist, the strength starts to fall off in a parabolic curve that is similar to the way the strength of filament yarns decreases with increasing twist.

Duerst has developed formulas for cotton which are still cumbersome, but which are somewhat more easily used:

$$\begin{aligned} \text{Yarn Strength} &= \text{KPSZYW} & (20) \\ \text{where } K &= \text{a constant} = 0.0574 \\ P &= \text{The Pressley index of fiber strength} \\ S &= \text{Active Fibers} \\ &= \left(\frac{3}{4} U^2 - U\right) \\ \text{and } U &= -1 + \sqrt{+8000} \end{aligned}$$

$$\text{Yarn No. } \sqrt{F}$$

and F is the fiber fineness from the Micronaire

Z = Twist Correction. At the optimum twist

$$Z = 1.00$$

$$Z = 1 - \left\{ \frac{(\text{Lut} - 280)}{280} \right\}^2$$

where t = turns per inch
L = Classers staple length
Y = Twist Index

$$Y = \sqrt{\text{Lut}}$$

1

$$W = 1.5 A \sqrt{F}$$

where A is the Arealometer reading

Because of the difficulties encountered in handling these formulas, it is usually easier to obtain estimates of yarn strength from the plots of actual tests. Two such plots are shown in Fig. 4-14. One is for a fine long fiber combed cotton spun into a high count yarn. The other curve is for a coarse, short fiber spun into a medium count yarn. In both curves, the strength rises to a maximum and then falls off. However, the strength rises much more rapidly for the fine fiber than for the coarse fiber. The plot of strength versus twist multiple for other staple fiber yarns is similar in general shape to these curves. At the maximum strength, both these yarns had a strength of approximately 1.2 grams per denier.

The value of 1.2 grams per denier is close to what is obtained with most commercial single cotton yarns. It is interesting to compare this value with values obtained by Gregory for "perfect" experimentally produced yarns. He obtained strength ranging from 3.78 grams per denier for the best cotton to 1.46 grams per denier for short, weak cotton. Normal yarns do not reach such high values because of non-uniformity of twist and size.

The twist helix angle necessary to obtain the maximum strength varies with the type of cotton used. However, the range is not great, being about 29° for long, fine cotton and about 36° for short, coarse cotton. The relationship between twist multiple and helix angle of cotton yarns has been determined experimentally. The values are as shown in the following table:

Fineness Staple Length	HELIX ANGLE		
	Fine	Medium	Coarse
3 T.M.	1 7/8"	1"	3/4"
4 T.M.	21.5°	25.0°	28.0°
6 T.M.	24.0°	27.0°	29.5°
8 T.M.	31.0°	33.0°	34.0°
	37.0°	37.0°	38.5°

Sullivan and also Gregory have shown how this helix angle is related to the strength of the fiber and to the strength of the yarn. A modification of their formulas takes the following form:

$$\text{Yarn Tenacity} = (\text{Fiber Tenacity}) (\cos^2 T)$$

where the tenacity is in units such as grams per denier. This formula is valid only for values of T greater than the optimum twist so that the yarn fails primarily by breakage of the fibers rather than by slippage of the fibers. Tests made by staining with Congo Red have shown that for cotton at the optimum twist about 60 per cent of the fibers are broken when the yarn is ruptured. By dyeing the outside of the yarn, it can be shown that the fibers that break first are those in the core of the yarn.

Because of the irregular arrangement of the fibers in the yarn, and because this formula does not take into consideration such factors as the stress-strain properties of the fibers and the outer fibers which are not bound tightly, this formula has very limited application for practical calculations. It has been found that in commercial yarns made from staple fibers, the actual yarn tenacity is only a fraction of the value given by this formula.

As described above, the correction for surface fibers can be related to the yarn size. In Formula (19) used to calculate the optimum twist for cotton, there appears such a correction. When a fiber like asbestos which is quite short and has a low coefficient of friction is made into yarn, this correction becomes more important. For normal industrial yarns which are made from a blend of about 85 per cent asbestos and 15 per cent cotton, the formula takes this form:

$$\text{Optimum Asbestos T.M.} = 2.35 + 0.0122 \times \text{Cut} \quad (21)$$

$$\text{Also Asbestos T. M.} = (\text{Turns per inch}) \sqrt{\text{Cut}} \quad (22)$$

where cut is the yarn numbering system used for asbestos

and represents the number of 100-yard lengths in one pound. Fig. 4-15 shows the effect of twist on the strength of a 49-cut asbestos yarn, and also shows how the optimum twist multiple increases with increasing cut number. The twist multiple at the bottom of the graph is based on the cotton system with an appropriate correction for density and the twist multiple at the top of the graph is based on Formula (22). Lack of an adequate means of measuring fiber length and fineness of asbestos prevents incorporating those values into Formula (20). However, Fig. 4-15 does show in a qualitative manner the effect of those fiber properties. It can be seen that the peak of this curve is at a high twist multiple and that the strength drops off rapidly on each side of this maximum. At the peak for this yarn, the count strength product (asbestos cut \times pounds skein break) was 4,400.

For Dynel the formula for optimum twist takes the following form:

$$\text{Optimum T.M.} = 0.10 \text{ Denier} - 0.35 \text{ Length} + 0.008 \text{ Yarn} + 3.02 \quad (23)$$

where the length is the length of the fiber in inches and the yarn is the yarn number in cotton count.

Fig. 4-16 shows how the strength of various yarns made of three-denier, 1½-inch Dynel varies with twist. These curves are similar to that found for other fibers inasmuch as the finer yarns require a higher twist multiple for optimum strength than do the coarser yarns. However, the curves are unusual in that the coarse yarns are more sensitive to twist so that the curves show a sharp peak. As a general rule, the fewer the fibers in a yarn cross section, the more sensitive the yarn is to twist so that fine yarns made from coarse fibers show a sharper peak.

The effect of twist on the strength of wool yarns is shown in Fig. 4-17. A 64s grade wool was used and the curves show how the strength varies when the same roving was used to spin a 1/11 worsted count and a 1/44 worsted count. The curves indicate that a higher twist is needed to obtain the maximum yarn strength that is normally utilized in commercial yarns. Another feature of these curves that is unusual is that the optimum twist multiple is lower for the fine yarn than for the heavy yarn. This is believed due to the fact that wool is a relatively coarse and highly crimped fiber so that the heavy yarn required more twist in order to force the fibers into an optimum degree of proximity so as to take advantage of interfiber friction. For these yarns, the maximum strength of the 1/44 was 0.40 grams per denier, and the maximum strength of the 1/11 was 0.64 grams per denier.

The effect of twist on the strength of single yarns spun from staple viscose, nylon and Orlon fiber is shown in Fig. 4-18. In these cases, as in the other examples of yarns spun from staple fibers, it is seen that there is the same type of curve with the strength rising rapidly at first to a maximum and then falling off more slowly. In general, with fibers that are short, coarse, or if they are spun into fine yarns, a higher twist is needed to reach the maximum strength. Considering the wide variety of different materials that have been considered, it is surprising to find a rather low range of twist multiples required for the maximum strength—from about 2.5 to 6.0 based on the cotton count system.

There is probably more data in the literature on the relationships between the strength and twist of yarns than there is on any other relationship connected with twist.

The tensile strength of the yarn is an important index of yarn quality, not only because high strength is usually wanted, but also because the strength of the yarn is related to other yarn properties such as uniformity. This relationship is shown by tests as have been made on cotton by Morton and on wool by Stanbury and Byerly. From their data, it is possible to plot the coefficient of variation of strength against the twist multiple. For both of these natural fibers, it was found that the uniformity of strength was best at a twist multiple somewhat less than that required for maximum single end strength, but coincides fairly close with the twist multiple required for maximum skein strength. Limited work by the author has indicated that this same relationship holds true for the synthetic fibers. It is believed that this same twist for maximum skein strength will give the minimum number of ends down in spinning, but insufficient data is available at present to check this hypothesis.

When a single-ply yarn is woven into fabric, it is found that the strength of the fabric is dependent on the twist of the yarn. With some tightly woven fabrics where there are many yarn interlacings, it is found that the maximum strength of the fabric is obtained with a slightly lower twist than is needed to obtain the maximum strength of the yarn. This is to be expected since the binding action from weaving reduces the need of the binding action of twisting. However, for the majority of commercial fabrics, it will be found that the maximum fabric strength is achieved by using very nearly the same twist as is needed for maximum yarn strength.

This is particularly true where the fabric is tested by the grab method rather than the strip method. Fig. 4-19 shows the relationship between fabric strength and yarn strength at different twists. The data for these curves was obtained by testing the filling tensile strength of the fabric using the conventional one-inch ravel strip test. The tensile strength of the yarns was determined by breaking together a strand of the same number of yarns as were tested in the fabric. The plain weave fabric was woven with 100 ends per inch and 96 picks per inch of 80s combed cotton yarn, and it is seen that on a grams per denier basis, the fabric is stronger than the yarn and that the maximum strength is achieved at a twist multiple of 3.0 compared to an optimum twist multiple of 3.5 for the yarn. In contrast, a 2 \times 2 basket weave fabric was woven with 34 ends and 34 picks of 10s carded cotton yarn and the fabric strength is slightly lower than the yarn strength, and the maximum fabric strength occurs at the same twist as was found for the optimum yarn twist.

Two single yarns can be twisted together with the ply twist in either the "S" or the "Z" direction. The highest strength is usually obtained by having the direction of twist in the ply in the opposite direction to that of the singles yarn. When this is done with most commercial yarns, a five per cent to 20 per cent increase in tenacity is obtained. This increase in strength is partly due to the increased uniformity of the resultant structure, and is partly due to the increased binding action which prevents fiber slippage. In a plied yarn, it is possible to obtain this binding action without the high twists used in single yarns which lead to unequal stresses of the fibers.

If fiber slippage did not play a part in the strength of a two-ply yarn, we would expect to find the same relationship between the single twist and the ply twist that was found

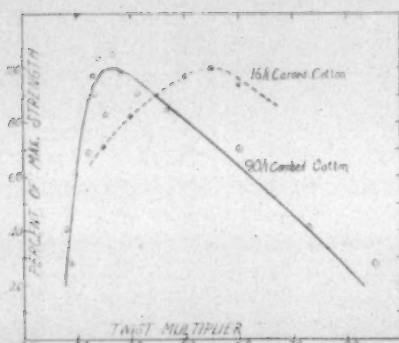


Fig. 4-14—Effect of twist on the strength of cotton yarns (Source: Balls, *Studies of Quality in Cotton*).

A 30s yarn was spun from Deltapine cotton of average properties at various twists and tested for single strand break.

Turns Per Inch	Ounces Break
15.4	8.0
20.8	9.7
26.3	10.6
32.3	9.3
37.8	8.3

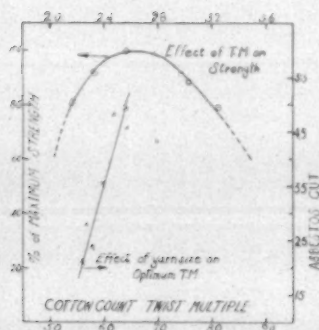


Fig. 4-15—Effect of twist on asbestos yarns.

Showing how twist effects the strength of yarns made of a blend of asbestos with 15 per cent cotton.

Asbestos Cut Yarn Size	Turns Per Inch	Skein Break Pounds
49.2	13.98	40.5
49.2	16.47	46.1
48.9	18.02	54.2
48.4	19.49	53.9
46.8	20.50	50.3
46.4	20.76	48.2
46.6	22.50	40.7

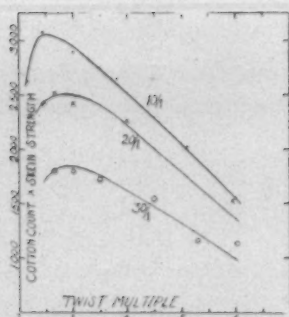


Fig. 4-16—Effect of twist on Dynel yarns (Source: Kochar).

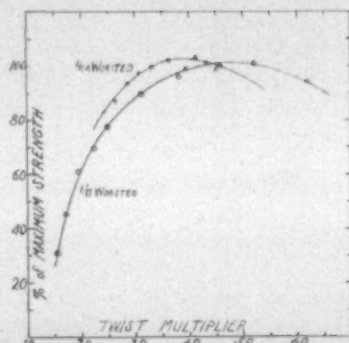


Fig. 4-17—Effect of twist on the strength of wool (Source: Stanbury and Byerley, *Journal of the Textile Institute*).

Yarn Size	Twist Turns Per Inch	Single Strand Ounces Strength
20.4	22.4	7.1
20.9	20.5	7.3
21.3	19.0	7.2
21.7	15.9	7.1
21.8	13.7	6.8
22.1	12.1	6.2
22.1	10.2	5.9
22.4	8.5	4.9
22.6	8.5	4.9
22.6	6.8	3.2
31.0	24.5	4.0
31.6	22.4	4.1
32.0	20.5	4.2
32.2	19.0	4.1
32.2	17.3	4.0
32.3	15.9	4.0
33.1	13.7	3.7
33.2	12.1	3.6
33.5	10.2	2.9
33.8	8.5	1.8

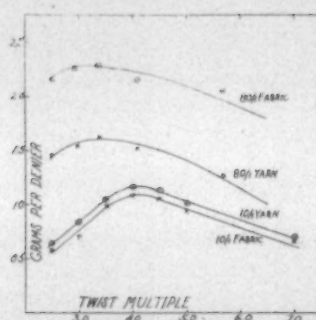


Fig. 4-19—Effect of singles twist on fabric strength (Source: Scheifer et al, National Bureau of Standards).

10s yarn in a 2 x 2 basket weave with 34 ends x 34 picks.

Filling T.M.	Lbs. Strength Yarn	Lbs. Strength Fabric
2.50	25	23
3.00	33	28
3.50	41	39
4.00	46	43
4.50	45	42
5.00	40	37
7.00	28	28
9.00	22	22

80s yarn in a plain weave with 100 ends x 96 picks.

Filling T.M.	Lbs. Strength Yarn	Lbs. Strength Fabric
2.50	19.9	30
2.92	21.6	31
3.32	22.8	32
4.07	21.4	30
5.64	17.9	29

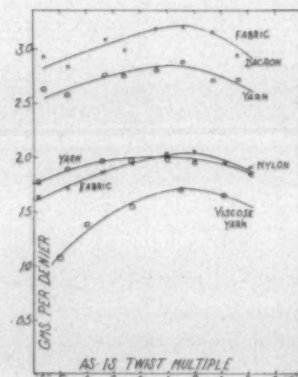


Fig. 4-20—Effect of ply twist on the strength of synthetic spun yarns and fabrics.

Yarn Size	Single T.P.I.	DACRON Ply T.P.I.	Lbs. Strength Yarn	Lbs. Strength Fabric*
15.7/2	10	2.5	4.03	158
16.8/2	10	5.2	3.79	159
16.0/2	10	8.1	4.21	168
16.2/2	10	11.0	4.05	166
15.4/2	10	14.2	4.20	163
16.0/2	10	16.4	4.04	163
14.6/2	10	19.5	4.05	159
15.4/2	10	22.4	4.09	163

*A one-inch strip raveled to 36 ends.

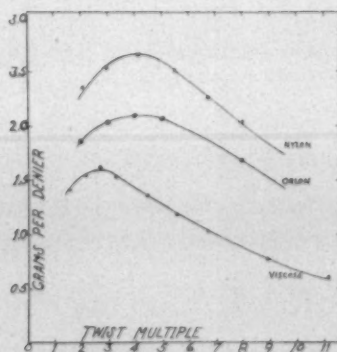


Fig. 4-18—Effect of twist on the strength of yarns spun from synthetic fibers. The nylon was three-denier, three-inch Du Pont Type 200. The Orlon was two-denier, two-inch Du Pont Type 42. The viscose was 1.5-denier, two-inch, American Viscose Corp.

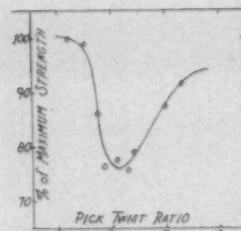


Fig. 4-21—Effect on the warp strength of the ratio of the picks to the ply twist (Source: Pickup, *Journal of the Textile Institute*).

for filament yarns as shown in Fig. 4-11. For medium to coarse yarns spun from synthetic fibers, such a relationship is approached so that the maximum tenacity is reached when the ply twist multiple is equal in value and opposite in direction to the single twist multiple. This is shown in Fig. 4-20 where the tenacity is plotted against the "As-Is" twist multiple (the "Z" single twist multiple minus the "S" ply twist multiple). In the fabric form, it is seen that the curves have a sharper peak that is more nearly centered on the Zero As-Is twist. The yarns were tested for single end break and the fabrics were tested for ravel strip break in this case.

When a yarn is made from fibers that are relatively short or otherwise difficult to bind into the structure so that they will not slip when the yarn is tensioned, it is necessary to obtain some of this binding action from the ply twist. Work published by Austin and by Fiori et al have shown that this is the case with carded cotton yarns. In these cases, if the strongest single yarn (which has a T.M. of about 4.5) is plied, it is found that the ply twist multiple which will give the maximum strength is equal to the single twist multiple. However, if a low twist single yarn (with a T.M. of about 3.0, is plied, it is found that the maximum strength is reached with a ply twist multiple of about 6.0, and that the tenacity of this strand is higher than the strand made in which the single and ply twist multiple is 4.5. Additional work done by the author indicates that when woven into fabric (where still more binding is obtained), the best strength cotton yarn would be produced with the low twist singles yarn that is plied with the same twist multiple as was used for the singles.

Yarns are frequently made with more than two plies, and here again the same principle seems to hold—the maximum tenacity is achieved when the ply twist multiple is the same value, but in opposite direction to that of the component singles yarns. However, when yarns are made with a larger number of plies, it is generally found that the strength of the yarn is not as sensitive to changes in twist as it is with the two-ply yarns. For this reason, it is necessary to condition and test the yarns very carefully.

When yarns are twisted into a cord structure, the effect of twist on the strength of the product becomes more difficult to follow. This is probably the result of complications such as wet twisting and tensioning. Another important factor that complicates tensile results from cord is that certain levels of twist prevent the free movement of the fibers so that they are unable to realign themselves during the last twisting operation. If these complications did not exist, we would expect that the strongest cords would be those in which the sum of the various twists (with "Z" twist given a positive value and "S" twist given a negative value) would be zero. This is seldom the case in actual practice as shown by the following example:

An 8/1 yarn made of combed cotton was spun with a 2.5 "Z" T.M. This was then wet twisted into an 8/2 ply yarn with a 5.0 "Z" T.M. The resultant ply yarn was then twisted into an 8/2/3 cord with various "S" twists. This cord was then tested for single strand strength with the following results:

Cord T.M.	Sum of All T.M.'s	Cord Grams/Denier
1.97	5.5	3.25
2.84	4.7	3.38
4.01	3.5	3.48
4.99	2.5	3.39
6.20	1.3	3.32
7.42	0.1	3.20

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A practical example in which the above theory appears to hold is in the production of cotton cord for tires. For this product, the ply and the cord twist are determined by other considerations such as flux endurance, but the singles twist can be varied to obtain the best strength. For a cord with a 13/3/3 construction twisted ZZS, the following results were obtained. It is noticed that when the singles twist is altered so as to obtain a lower "As-Is" or Sum of Twist Multiples, that a higher tenacity is obtained.

Test	A	B	C
Single T.P.I.	10.33 Z	12.43 Z	18.15 Z
Single T. M.	2.87	3.45	5.04
Ply T.P.I.	19.18 Z	19.14 Z	19.95 Z
Ply T.M.	9.20	9.19	9.57
Cord T.P.I.	10.49 S	10.25 S	10.54
Cord T.M.	-8.66	-8.51	-8.76
Sum. T.M.	3.41	4.14	5.85
Grams/Denier	1.86	1.83	1.60

This same concept is also put to practical use in the rope industry when a product is wanted with the greatest possible tensile strength. In this case, a cable twist is used with a ZSZ construction. An examination of a large number of good quality ropes made of such varying materials as nylon, abaca, and steel all reveal the fibers or wires are parallel to the axis of the rope, thus indicating that the sum of the twist angles (approximately the twist multiples) is equal to zero. It is recognized that for some ropes where other properties, such as abrasion resistance, is wanted, a hawser twist with a ZZS twist is used, and for that type of rope, a zero sum for the twist multiples is not utilized.

When a cord is being manufactured and it is desired to obtain the maximum strength, it is necessary to minimize any distortion of the component strands such as is produced by one component being flattened as it is pressed against the other components. This is frequently accomplished through the use of a three-strand cord construction. When a higher number of strands is used, it is a common practice to place a core in the cord or rope so that the strength-bearing strands will not be distorted.

It is also desirable to allow the component fibers to readjust themselves as the cord is being twisted so that each fiber is in a position to take up its share of the load. Some of the techniques used to accomplish this are lubricants and the twisting dividers discussed in Chapter III. Another technique which has not been fully proven is to use a hawser twist, but to have the sum of the twist multiples equal to zero. This is believed to be superior to the use of a cable twist, because during the last twisting operation the length of the single yarn and the ply yarn will be affected, and it is desirable for them both to elongate rather than for one to elongate while the other contracts. Of course, when a rope laying machine is used, this problem is minimized to the point where it can be neglected since the twist in the singles and the ply yarn is hardly affected.

A case where the fabric strength is affected by the yarn twist in an unusual manner is when a two-ply yarn is used in the warp of the fabric. When this is done, it sometimes happens that as the picks of filling are put into the fabric, the warp twist is drastically changed. This is caused by the back and forth motion of the reed as the pick is beaten into the fell of the cloth. This phenomenon is of importance only when a relatively flat yarn like a two-ply yarn is used in the warp. Also, the effect is only found when one pick is put in for about each half turn of the ply warp. If

the ratio of the picks divided by the twist approaches 2, the critical value is reached. Taking the crimp into consideration the following formula can be used:

$$\text{Pick-Twist Ratio} = \frac{P}{T(1+C)} \quad (14)$$

Where P = picks per inch
T = ply turns per inch
C = Warp crimp

Studies of this phenomenon made by L. F. Pickup have indicated that when this ratio has a value of 2, a decrease of up to 20 per cent can be observed in the strength of the warp as shown in Fig. 4-21.

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Fiber-Fabric Relationships Discussed

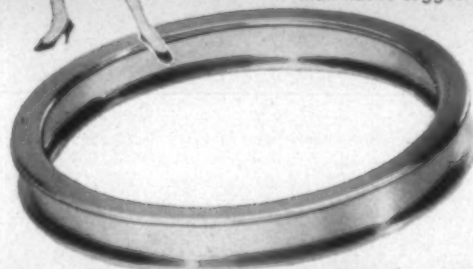
Nearly 200 chemists and textile engineers met recently at the third centennial year symposium on fundamental fiber-fabric relationships held at the Polytechnic Institute of Brooklyn, N. Y. The assemblage heard research specialists from both the textile and chemical industries explore the way individual fiber characteristics affect the finished yarn product. Dr. John H. Dillon of the Textile Research Institute was chairman of the meeting.

Featured as speakers were Neal Truslow, U. S. Rubber Co., who spoke on "The Relationship Between Fiber Properties and Cotton Processing Systems"; Walter Ingenthron Jr., Pacific Mills, "The Relationship of Fiber Properties to Processing on Worsted Systems"; Dr. Walter J. Hamburger, Fabric Research Laboratories, "Effects of Twist on the Mechanical Behavior of Yarns"; Dr. Howard A. Thompson and G. W. Bartlett, Tennessee Eastman Corp., "Frictional Characteristics of Filament Yarns and Staple Fibers, and the Effect on Friction Produced by Various Lubricants"; and Dr. G. R. Ward, General Aniline, "Static Performance of Yarns and Fabrics."



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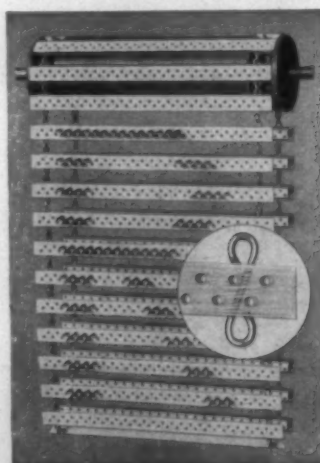


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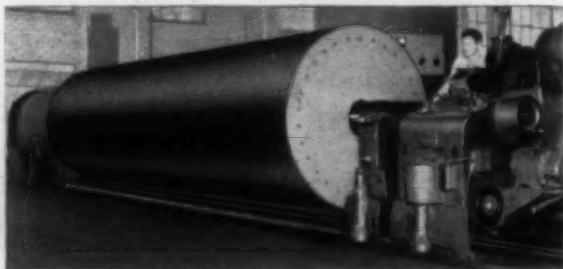
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Mill Tour Scheduled For Cotton Producers

The American Cotton Manufacturers Institute will sponsor its second "Cotton Producer Mill Tour" during March, according to J. Craig Smith, institute president. Mr. Smith said an invited list of leaders from major producing areas across the Cotton Belt will be guests of A.C.M.I. for an on-the-spot look at typical mill operations during a three-day program scheduled to be held March 2-4. The event is being arranged in response to requests by mill men and producers alike owing to the success of a similar mill tour held last year at Clemson, S. C., Mr. Smith said, as part of the A.C.M.I. effort to enable producers and manufacturers to discuss mutual problems with better understandings of each other's viewpoints.

This year's program of activities will be centered in Charlotte, N. C. The visitors will see how their product is spun, woven and processed into consumer goods by the textile industry, No. 1 customer of the U. S. cotton farmer. Several manufacturing establishments in the Charlotte vicinity are co-operating in arranging tour events. There will also be luncheon and dinner meetings designed to encourage an exchange of information and ideas among the producers and manufacturers, Mr. Smith said. In addition to visiting cotton manufacturing plants, the producers will also see textile mills engaged in processing other fibers. The purpose, Mr. Smith said, is to provide the visitors with as broad a picture as possible of the textile manufacturing industry and the important part of cotton in that picture.

Piedmont A.A.T.C.C. Sets Winter Meeting

The annual Winter meeting of the Piedmont Section of the American Association of Textile Chemists & Colorists will be held at the Poinsett Hotel, Greenville, S. C., Jan. 29. Jack L. Green will preside over the meeting, which will include a research meeting, officers' luncheon, technical meeting, social hour and banquet. Dr. George M. Ganta, technical manager of the textile chemical division of Antara Chemical Division, General Aniline & Film Corp., will be the featured speaker at the afternoon technical session. He will speak on "Recent Developments in Cotton Finishing." The afterdinner speaker will be H. S. Reeves, director of the social security office, Charleston, S. C.

Du Pont Increases Grants To Colleges

A fund of \$291,000 for grants to universities and colleges to help improve the teaching of science and mathematics has been announced by Du Pont as part of its \$800,000 aid-to-education program for 1955-56. There are three separate parts to the support of teaching, which is the most recent development in the company's program. In the newest phase, \$75,000 for Summer and Winter fellowships for master's degree training for high school science and mathematics teachers; \$125,000 to advance the teaching of chemistry in 50 privately supported institutions, mostly liberal arts colleges; and \$91,000 for 24 post-graduate teaching assistantships in chemistry.

The support for better teaching expands an activity which, until the present academic year, was largely experimental. It was developed by the company in recognition of a growing need for such assistance and was worked out in co-operation with educators throughout the nation. This is

now the largest single part of the company's aid-to-education program, which for many years has also provided grants for fundamental research and post-graduate fellowships. The enlarged program will assist more than 100 institutions in the next academic year.

In its full program of aid-to-education, the company has authorized a total of more than \$800,000 in grants for the 1955-56 academic year, as compared with over \$700,000 for the present year. Under the longer standing plans, the company is granting \$279,000 for fundamental research, \$210,000 for post-graduate fellowships in science and engineering, and the balance for miscellaneous contributions. As has been the case in previous years, Du Pont is making the awards to selected colleges and universities and leaving decisions on detailed use of the funds up to them.

Benson To Address National Cotton Council

Secretary of Agriculture Ezra Taft Benson will be the principal speaker at the 17th annual meeting of the National Cotton Council at the Shamrock Hotel in Houston, Tex., Jan. 31-Feb. 1. The Secretary will address approximately a thousand delegates at the opening session on Monday, Jan. 31.

Charles B. Shuman, Sullivan, Ill., recently-elected president of the American Farm Bureau Federation, heads the list of speakers on Tuesday. He will be heard at the beginning of the afternoon session in an address, "Farmers Look to the Future." Announcement of the principal speakers was made by A. L. Durand, Hobart, Okla., president of the council, who also is scheduled to address the industry

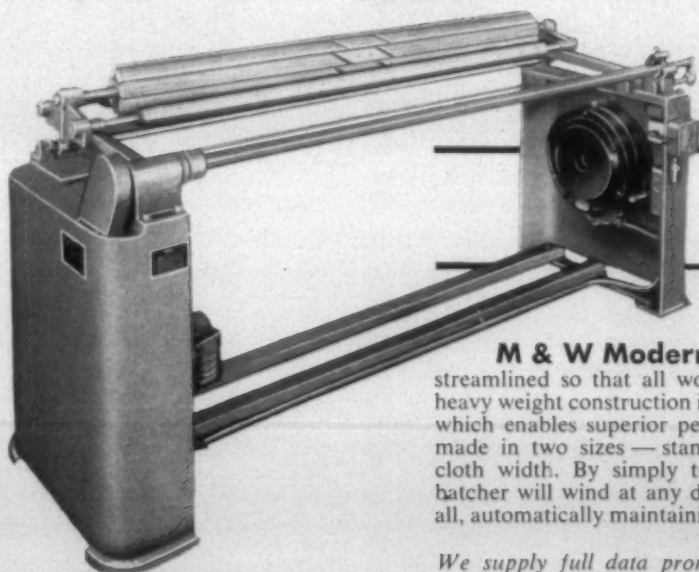
leaders on the opening day. "The cotton industry is extremely honored that the Secretary of Agriculture has consented to address its organization and discuss agricultural problems in which it is vitally interested," Mr. Durand stated in his announcement. Secretary Benson will be the first Secretary of Agriculture to address the cotton group since Secretary Clinton D. Anderson's appearance at the Galveston meeting in 1947.

John H. Dillon To Receive Smith Medal

Dr. John H. Dillon, director, Textile Research Institute, Princeton, N. J., has been named to receive the Harold De Witt Smith Memorial Medal for 1955. This is the sixth award of the medal by Committee D-13 on Textile Materials of the American Society for Testing Materials. The medal will be presented to Dr. Dillon at a luncheon in his honor on Thursday, March 17, during the Spring meeting of Committee D-13, March 15-18, at the Statler Hotel, New York City. The medal is a testimonial to the memory of the late Harold De Witt Smith, who pioneered in the concept of an engineering approach to the evaluation of the properties of textile fibers and to their utilization. It was endowed by Fabric Research Laboratories Inc., Boston, Mass., and is awarded at intervals of not less than one year by the committee for outstanding achievement in research on fibers and their utilization.

Dr. Dillon, who received his Ph.D. degree from the University of Wisconsin, joined the physics research group at the Firestone Tire and Rubber Co., Akron, Ohio, in 1931, became head of the physics department in 1937, and

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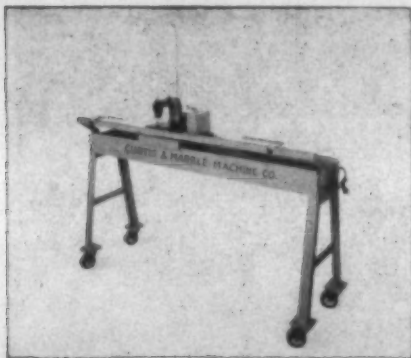
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assistant director of research in 1945. He was appointed director of research of Textile Research Institute in 1946 and was made director of the institute in 1951. Dr. Dillon is the author of many publications in the textile field, and holds a number of U. S. and foreign patents. He has been granted honorary degrees from Ripon (Wisconsin) College and Lowell (Mass.) Technological Institute.

N. C. State Host To A.T.M.A. Event

The School of Textiles, North Carolina State College, will be host to the American Textile Machinery Association on TEAM Day—Textile Education and Machinery Day—to be held on Feb. 15, 1955, according to an announcement by Dean Malcolm E. Campbell. "The purpose of the occasion," Dean Campbell stated, "will be to acquaint the members of the A.T.M.A. with the applications of the equipment they provide in textile education and research and to emphasize the team effort of machinery builders and textile colleges in providing training and research to benefit the textile industry."

Guests to be invited will include the officers and directors of the association and top officials of the member firms and the director of the North Carolina Textile Foundation. Plans for the day include discussion of the educational program and research activities of the School of Textiles, a luncheon, an inspection tour of the textile laboratories of the school, a social hour and banquet, and the N. C. State-Duke basketball game that will take place that evening. The guests will be housed at Scandia Village, a resort motel north of Raleigh, where the banquet will also be held.

Plans for the program are being made by Mrs. Mildred Barnwell Andrews of A.T.M.A. and William A. Newell of the School of Textiles at North Carolina State College who is chairman of the committee for the occasion. Other committee members at the School of Textiles are E. B. Grover, G. H. Dunlap, H. A. Rutherford, W. E. Shinn and B. L. Whittier.

A.S.T.M. Committee Week, Jan. 31-Feb 4

The American Society for Testing Materials will hold its annual Committee Week Jan. 31 to Feb. 4 at Cincinnati, Ohio. Headquarters for the meeting will be at the Netherland Plaza Hotel. Some 1,250 are expected to attend.

A.C.M.I. Conducting Area Conferences

A series of area meetings, beginning in the Southeast and extending later into New York and New England, were opened under sponsorship of the American Cotton Manufacturers Institute in Birmingham, Ala., on Jan. 17. The meetings are designed to bring textile manufacturers together for an evaluation of plans and activities in connection with the tariff problem and other matters of current interest. They were recently approved by the institute's board of directors.

Leading the discussions will be J. Craig Smith, A.C.M.I. president, who also is president and treasurer of Avondale Mills, Sylacauga, Ala.; and vice-presidents A. K. Winget, Albemarle, N. C., and F. E. Grier, Greenwood, S. C., assisted by Robert C. Jackson, Washington, D. C., A.C.M.I. executive vice-president, and other members of the staff. Invitations are being extended to manufacturers in the areas involved, Mr. Smith said. In addition to Birmingham, meet-

ings have also been held in Atlanta, Ga., Jan. 18; Columbus, Ga., Jan. 19; and Macon, Ga., Jan. 20. Future meetings have been arranged for Greenville, S. C., Feb. 16; Spartanburg, S. C., Feb. 16; Charlotte, N. C., Feb. 17; Gastonia, N. C., Feb. 17; and Greensboro, N. C., Feb. 18.

Textile Section, A.S.Q.C., Meets At Clemson

The textile division, American Society for Quality Control, will hold its fifth annual conference at the Clemson House Jan. 27-29 with the Clemson College School of Textiles as sponsor. The meeting will get underway with a tour of nearby mills on Jan. 27. The program of Jan. 28 will include a morning session devoted to a technical meeting on "Quality Control and the Human Factor." Stephen I. Rudo, Werner Textile Consultants, will preside over the session and P. H. Burrus Jr., general manager, Jackson Mills, Wellford, S. C., will be one of the featured speakers.

The afternoon program for Jan. 28 will include technical and educational sessions. K. K. Edgar of Henderson, Lindsay & Michaels Inc., Greenville, S. C., will be chairman for the technical session on "Quality Control and Industrial Engineering." Speakers will include H. Elliott Foster of Henderson, Lindsay & Michaels; and Donald Deming, Dr. J. J. Moder and Dr. R. N. Lehrer of the industrial engineering department of Georgia Tech.

David S. Chambers, associate professor of statistics, University of Tennessee, will be chairman for the educational sessions. John Brookshire, Owens-Corning Fiberglas Corp., will appear as speaker. The division's annual banquet will be held on the evening of Jan. 28.

The final day of the meeting will be taken up with a

session in the morning on "Quality Control in Testing and Research." Dr. H. K. Hughes, Celanese Corp. of America, will preside. Task groups of the division will meet after the technical session. The afternoon will include a technical session on "Quality Control in Processing," with Samuel B. King, Limestone Mfg. Co., Gaffney, S. C., as chairman. Appearing as speakers will be Norbert L. Enrick, Institute of Textile Technology; Joe Delany, general superintendent, Joanna (S. C.) Cotton Mills Co.; and W. H. Erslinger of M. Lowenstein & Son.

Big Turnout Expected At Annual A.C.M.I. Meet

The impending shape of the nation's foreign economic policy has greatly heightened the interest normally attached to the annual meeting of the American Cotton Manufacturers Institute, according to an A.C.M.I. bulletin to its membership. The observation was made by J. Craig Smith, the institute president, in notifying textile mills in some 25 states of arrangements for the sixth annual meeting of the industry's central trade association in Palm Beach, Fla., March 31 through April 2. Mr. Smith, who is president and treasurer of Avondale Mills, Sylacauga, Ala., forecast that an attendance of over a thousand persons might be expected in view of industry concern over a planned program of tariff concessions to Japan.

The A.C.M.I. head noted that cheap wage cotton goods imports from Japan in the last quarter of 1954 increased sharply, which indicated, he added, that textile tariffs in recent years have already been cut too deeply. While Japan's admittedly grave economic plight is of concern to the U. S. as a whole, he observed, the textile industry finds it hard to

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see why any one segment of the economy must be singled out for sacrifice. It is doubly hard to understand, he added, in view of the fact that the U. S. textile industry has already given up more business at home and abroad to Japan, and contributed more to helping Japan's mills recover from World War II, than any other American industry of comparable size.

In view of the critical situation which he said amounts to a struggle for survival of a basic U. S. industry upon whom millions are dependent directly or indirectly for a livelihood, attendance at the forthcoming A.C.M.I. meeting could well establish a record. Room reservation forms, transportation schedules and other data are being sent to member mills. Details of the three-day program have not yet been completed but will include forum-type group meetings, each devoted to a subject or problem of vital concern to the industry. These forum meetings will each have one or more outside speakers. They will involve practical problems with which the industry is concerned.

Du Pont Cites Increased Use Of Nylon In Rugs

The adoption of nylon as a basic fiber for carpeting during 1954 and the growing potential for 1955 were reviewed by top management and technical representatives of 13 leading carpet manufacturers in a series of conferences during the first week of Chicago's home furnishings market, Jan. 3 to 8. Sessions were organized by Du Pont's nylon sales section and co-ordinated by the newly-formed carpet merchandising section for the company. Basis of the meetings, according to Du Pont representatives, was the mutual interest of fiber producer and carpet manufacturer in continued improvement of nylon technology for the floor covering industry.

The carpet industry's stake in further development and proper merchandising of nylon in carpeting was dramatically increased in 1954 with some manufacturers adopting Du Pont nylon as a basic fiber. Fifteen months ago, only one pioneering producer was marketing nylon carpets, it was reported. The increase resulted, representatives said, from the widely felt need for a reliable domestic supply of carpeting fiber of uniform, controlled quality and stable price. Manufacturers using the fiber reportedly found nylon's low specific gravity gives greater coverage per pound of fiber, while its high strength adds to spinning efficiency. Further advantages were said to be the ability to piece-dye

nylon carpeting in a wide range of fast, level colors, versatility in styling, and adaptability to new economical manufacturing techniques.

National distribution, competitive prices over a wide range and aggressive advertising and promotion were reflected in large sales increases during the year, Du Pont representatives said. Nylon's consumer prestige was augmented by owners' satisfaction with long wear, lasting appearance, rich colors and diversity of styling in such constructions as carved Wiltons, friezes, moresques, striae and high and low piles.

Further advances in carpeting technology were predicted as a result of Du Pont's long-range programs of research on fiber properties and carpet construction, as well as short-term studies designed to improve manufacturing techniques. To aid in exploiting nylon's advances in carpeting, Du Pont pledged an increased promotional program spearheaded by the company's new home furnishings merchandising section. Plans disclosed for 1955 include heavy advertising in five leading homemaker's magazines, extensive contract and trade advertising through publications and direct mail, promotion campaigns co-ordinated with Carpet Institute efforts, continued retail sales training and publicity keyed to specific markets.

Cotton Research Clinic Program Announced

The complete program for the National Cotton Council's sixth annual Cotton Research Clinic, to be held Feb. 16-18 at Pinehurst, N. C., has been announced by M. Earl Heard, vice-president of the West Point (Ga.) Mfg. Co., and general chairman of the three-day meeting. Presiding over the technical sessions as chairmen will be: Emmett W. Bringle, National Cotton Council, Washington; W. Gordon McCabe, J. P. Stevens & Co.; Herman A. Dickert, School of Textiles, Georgia Institute of Technology, Atlanta; and Thomas G. Hawley, United Merchants Laboratories. The program will include:

Wednesday morning, Feb. 16—"Studies on Waste Reduction in Carding," John F. Bogdan, School of Textiles, North Carolina State College; "Mill Application of N. C. State Card Waste Studies," E. Allen Bentley, Swift Mfg. Co.; "Some Methods of Reducing Carding Wastes," Hugh M. Brown, School of Textiles, Clemson College; and "High Production Carding," Stuart H. Sherman, U. S. Rubber Co.

Wednesday afternoon, Feb. 16—"Pima S-1—Spinning

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Tests on a New American-Grown Extra-Long Staple Cotton," Burt Johnson, National Cotton Council; "Evaluation of Yarn Properties and Processing Performance of Pima S-1 Cotton," Louis A. Fiori, Southern Regional Research Laboratory; "Gin Overdrying—Its Effects on Cotton Processing and Yarn Quality," William R. Keyser Jr., Institute of Textile Technology; and "Influence of Fiber Length Distribution on Cotton Processing and Yarn Quality," Helmut R. Wakeham, Textile Research Institute.

Thursday morning, Feb. 17—"A New Instrument for the Rapid Measurement of Cotton Fiber Fineness and Compressibility," Kenneth L. Hertel, University of Tennessee; "Management of Quality—Control in Cotton Manufacturing," Oliver P. Beckwith, Fabric Research Laboratories; "Management of Quality—Reducing Non-Uniformity in Cotton Yarns," Joe L. Delany, Joanna Cotton Mills Co.; and "Management of Quality—Studies on Cotton Yarn Imperfections," Charles C. Wilson, West Point Mfg. Co.

Thursday evening—Feb. 17—"Management of Quality—Methods of Observation in Cotton Spinning," William J. Blydenstein, N. V. Katoenspinnerij, Bamshoeve, Enschede, Holland.

Friday morning, Feb. 18—"Increasing Frictional Properties of Cotton as an Aid to Processing," Hugh M. Brown, School of Textiles, Clemson College; "Effect of Fabric Structure on Fabric Properties," John J. Brown, Southern Regional Research Laboratory; "The S.R.R.L. Carding Cleaner," George J. Kyame, Southern Regional Research Laboratory; and "The Fiberbond Process—A New Approach to Twistless Yarns." The latter subject will be discussed by joint papers, "Theory and Product," Richard D. Wills, Bates Mfg. Co., and "Processing Equipment," John W. Powischill, Proctor and Schwartz Inc.

H. K. Hallett, vice-president and general manager of the Cotton Mills Division, Kendall Mills, will address a dinner meeting Wednesday evening.

Fabric Combines Fiberglas And Vinyl Resins

A new Fiberglas fabric called Weblon, which combines a specially woven and finished open-weave Fiberglas fabric and a series of specially engineered vinyl formulations, is now being produced by S. L. Chambers Associates, New York City. The fabric is said to be of high strength, water-proof, light in weight, soil repellent on both sides and sun, mildew and fire resistant. It will not rot, crack or peel and can be easily cleaned on both sides by merely rubbing with a wet cloth.

Weblon, which can be sewn on conventional sewing machines or electronically sealed, has thus far found application in the manufacture of baby carriages, strollers, car beds and car seats. A Weblon line of furniture was expected to be introduced by one of the nation's largest manufacturers of juvenile furniture at the annual Furniture Market held this month in Chicago. Other applications foreseen for

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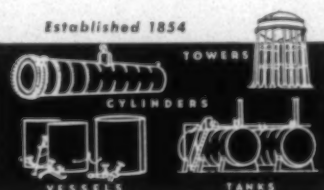
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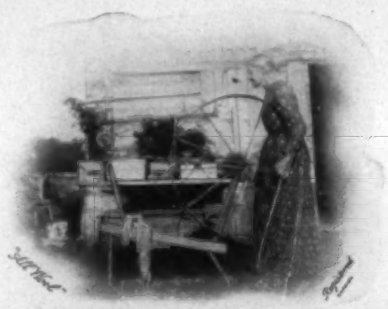
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Southeast A.A.T.C.C. Sets 1955 Meetings

The Southeastern Section of the American Association of Textile Chemists & Colorists will hold four meetings in 1955. They will include a technical session Feb. 12 in Talladega, Ala., to be held in the auditorium of the Alabama Power Co., followed by a social hour and dinner at the Purefoy Hotel. A meeting and dinner will be held at Lindale, Ga., in the American Legion Club April 23. The section's annual outing is scheduled for June 3-4 at Radium Springs, near Albany, Ga. A technical session will be held Sept. 10 at the Ralston Hotel, Columbus, Ga., followed by a dinner. The final meeting of the year will be held at the Atlanta (Ga.) Biltmore Hotel Dec. 3. This session will include a business meeting, election of officers, a technical session and a dinner.

Dynel-Saran Fabric Gets Underwriters Approval

The new Dynel and saran fire-resistant drapery fabric made by Chicopee Mills has been approved by both the Underwriters Laboratories Inc. and the New York City Board of Standards and Appeals, according to a recent announcement by John M. Renfro, product director of Chicopee's Lumite Division. This means that the New York City authorities regard the fabric as safe for use in places of public assembly. The Underwriters' approval is a listing of the material under flame-proofed textiles. This new non-combustion-supporting material is woven with Dynel in the warp and saran in the filling. Thirty per cent of the fabric's weight is Dynel, according to Mr. Renfro.

"While both of these synthetic fibers have established themselves individually in the fire-resistant field, this is the first combination of the two yarns developed on a practical scale," Mr. Renfro explained. "Dynel, Union Carbide's new science fiber, gives the fabric basic fire resistance and an improved drape and hand. The saran enhances its appearance and resistance to flame, while adding extra body to the fabric. Both fibers are moth and mildew-proof, have excellent shape retention and resistance to stains. The new fabric also has a much longer wear-life than most other fire-resistant drapery materials," Mr. Renfro reports.

S.T.A. Schedules Spring Meetings

Tentative meeting dates have been scheduled by the Southern Textile Association for its Spring divisional meetings. The Eastern Carolina division, headed by A. M.

Moore, superintendent of Plant No. 6, Erwin Mills Inc., Durham, N. C., will meet April 2 at the N. C. State College School of Textiles, Raleigh. On April 16, the Northern North Carolina-Virginia division will hold its meeting at a site to be announced. M. A. Carpenter, assistant superintendent, Mill No. 3, Erwin Mills Inc., Cooleemee, N. C., is chairman of the division. An evening meeting has been scheduled by W. M. Pittendreigh, chairman of the South Carolina division, on Thursday, April 21, at Ware Shoals, S. C., beginning at 7 p. m. Mr. Pittendreigh is superintendent of grey mills, Riegel Textile Corp., Ware Shoals, host for the meeting. R. M. McCrary, superintendent, Carolinian Mills Inc., High Shoals, N. C., chairman of the Piedmont division, will preside at a May 7th meeting of his group at a site to be chosen. Programs for the meetings will be announced as soon as they are completed.

Lurex To Be Used Extensively In 1955 Autos

Virtually all of the major automobile manufacturers are reportedly making broad use of Lurex metallic yarns in the upholstery of their 1955 cars, according to fabric suppliers for Detroit auto-makers. An increasing awareness of the woman's voice in car purchases has focused a greater attention among auto manufacturers to the interior design of their cars. With competition expected to be heavy in 1955, manufacturers have gone all out to please the ladies. New decorator colors and texture are being given particular attention in automotive interiors and Lurex is said to play a major part in adding the desired sparkle and dimension. The comparatively new metallic, non-tarnishing fiber is made in decorative colors including metallic shades and is readily dry-cleaned. It is made by covering aluminum foil with a plastic laminate. The outside film is joined to the aluminum with a permanent adhesive. The variety of colors in which Lurex is available is the result of adding color pigments to the adhesives, thus assuring permanence of the metallic radiance, it is said. Introduced by The Dobeckmun Co. in 1946, it is made in continuous filament form and can be run on standard worsted or cotton looms as either warp or filling.

1955 Basic Materials Exposition Scheduled

The third Basic Materials Exposition will be held at Convention Hall, Philadelphia, Pa., May 31 to June 3, according to an announcement by Clapp & Poliak Inc., the New York exposition management firm which produces the event. Simultaneously, it was disclosed that the scope of the exposition will be broadened and its name changed to include the subtitle, "The Design Engineering Show." The Basic Materials Exposition, held in New York in 1953 and in Chicago this year, is unique among industrial shows because no machinery nor end product is displayed. Exhibits are restricted to materials which go into

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the making of end products for consumer or industrial use. With the broadened scope in 1955, however, certain manufactured products which are themselves included in the manufacture of end products will be shown. These include mechanical, electrical, hydraulic and pneumatic components of end products, as well as finishings, coatings and other parts, shapes and forms. Concurrently with the exposition, a three-day conference is held

S. C. To "Advertise" Via Movies, Television

The State Development Board of South Carolina has authorized the production of a motion picture depicting the attractions of South Carolina to be shown on television and in movie theatres throughout the country. Contracts have been signed for the movie with a nationally known film studio, and production was expected to begin soon after Jan. 1. The completed film will be ready for free distribution to television stations, theatres, civic clubs and other groups by early Summer, it is expected. The movie will be produced in co-operation with George M. MacNabb, publicity director of the board, and Henderson Advertising Agency, of Greenville. Two versions, one 27 to 29 minutes in length and the other about ten minutes, will be available.

At a recent meeting of the board S. W. Gable, acting director, informed the board that prospects for further industrial development continue to be good. He said competition among the states for new industry is growing more intense, particularly in the South.

Phi Psi Schedules Annual Convention

In conjunction with its own 50th anniversary observance, Gamma Chapter, the Lowell (Mass.) Technological Institute affiliate of Phi Psi fraternity, will play host to the 53rd annual national Phi Psi convention Thursday through Saturday, April 14-16, at the Hotel Beaconsfield in Brookline, Mass. For the first time in Phi Psi history, wives of members will be invited guests, and a special "get-acquainted"



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tea is planned for them during one of the afternoon programs. A tour of the L.T.I. campus will be featured on Friday afternoon, and guest speaker at the closing banquet Saturday evening will be Lowell Tech President Martin J. Lydon. Phi Psi numbers among its members many men prominent in the textile field who are expected to attend the convention. Active chapters are located in Lowell, New Bedford, and Fall River, Mass.; Philadelphia, Pa.; Raleigh, N. C.; Clemson, S. C.; Atlanta, Ga.; Lubbock, Texas; and Auburn, Ala., and alumni chapters in Boston, New York, Providence, R. I.; Chicago, Ill.; Greenville, S. C.; Charlotte, N. C.; and Albany, N. Y. All Phi Psi men are asked to observe the date of the 53rd convention which originally was scheduled for an earlier time.

Rayon And Acetate Shipments

Total shipments of rayon and acetate filament yarn and staple in the first 11 months of last year were about eight per cent under those in the corresponding period of 1953, according to the *Textile Organon*, monthly bulletin of the Textile Economics Bureau Inc. In the January-November 1954 period, the domestic industry shipped 1,001,500,000 pounds. While shipments began to pick up in the latter months of the year, it appears certain that the final results will be lower than the 1,168,700,000 pounds shipped for the whole year of 1953 and considerably below the 1,268,500,000 pounds shipped in the peak year of 1950.

With the exception of the rayon staple+tow branch of the industry, 1954 was not a good one for the rayon and acetate producing industry. In the first 11 months of 1954, the industry shipped 281,600,000 pounds of rayon staple+tow, or 36 per cent more than the 207,000,000 pounds shipped in the full year of 1953.

In the 11-month period, rayon regular+intermediate tenacity yarn shipments amounted to 163,800,000 pounds, 16 per cent under the comparable 1953 period. Acetate yarn shipments in the period, amounting to 184,300,000 pounds, were off 13 per cent; rayon high tenacity yarn at 308,900,000 pounds declined 25 per cent and acetate staple+tow at 62,900,000 pounds also declined 25 per cent.

Total production in the 11-month period amounted to 984,200,000 pounds, a figure well below shipments and hence stock in the hands of producers declined to 92,500,000 pounds at the end of November. Producers' stock at the end of December 1953 was 109,800,000 pounds.

Production of rayon regular+intermediate tenacity yarn in the 11 months totaled 155,800,000 pounds or 8,000,000 pounds below shipments. In acetate yarn and rayon high tenacity yarn also, shipments in the January-November period were well ahead of production. On the other hand, rayon staple+tow shipments almost exactly balanced production while acetate staple+tow shipments were slightly below output.

In the first ten months of 1954, imports of rayon (possibly including some acetate) staple totaled 36,083,000 pounds, compared to 64,332,000 pounds in the corresponding period of 1953, a decline of 44 per cent. The *Organon* notes that if imports in November and December were to come in at the October rate of 8,072,000 pounds, total imports for the year would be about 52,000,000 pounds as against 68,117,000 pounds in 1953.

In shipments to the export market, acetate yarn continues to dominate. The *Organon* estimates that the current annual

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rate of acetate exports is about 4,000,000 pounds or slightly below the 1953 total of 4,290,000 pounds. Exports of rayon regular+intermediate tenacity filament yarn may amount to about 2,000,000 pounds when final data are available, while rayon high tenacity yarn shipments overseas are expected to reach about 1,600,000 pounds. In 1953, total rayon regular tenacity yarn exports were 1,278,000 pounds and rayon high tenacity yarn exports amounted to 1,475,000 pounds.

Total 1954 exports of acetate staple+tow are currently estimated by the *Organon* at 3,000,000 pounds, compared with 3,342,000 pounds in 1953. Exports of rayon staple+tow may reach 2,250,000 pounds in 1954 compared with only 408,000 pounds in 1953.

Among non-cellulosic fiber exports, the major item is nylon filament yarn and foreign shipments in 1954 will probably exceed 2,000,000 pounds as against 1,660,000 pounds in 1953. Exports of nylon and other non-cellulosic thrown yarns, at an annual rate of 3,700,000 pounds in 1954, are running below the 1953 total of 4,060,000 pounds.

The *Organon* notes that in 1954 there were no over-all realignments of rayon or acetate prices, although several price adjustments in certain products were made. In August, for instance, Celanese Corp. of America advanced its prices on 150, 200 and 300-denier acetate yarn in special packages while E. I. du Pont de Nemours & Co. Inc. raised its prices of 150-denier acetate yarn to a uniform 72 cents a pound regardless of package.

In July, American Viscose Corp. eliminated the one cent a pound premium previously charged for dull rayon staple and Du Pont and Hartford Rayon Co. adjusted their prices accordingly.

In August, North American Rayon Corp. set its price for its 1,650 and 1,900-denier super high tenacity yarn to 64 cents and American Viscose Corp. in November announced the 64-cent price for its super high strength yarn.

Summing Up The Rayon And Acetate Markets

The rayon and acetate markets have improved in the last quarter of 1954, although estimated shipments for the year are below those of 1953, Harry Dalton, vice-president, American Viscose Corp., Philadelphia, Pa., said in a yearly review and forecast. Although the market has been in a recession since 1951, he said there have been signs of improvement. Industry shipments of rayon staple for 1954 were about 50 per cent greater than 1953, he pointed out. Yarn shipments during 1954 were about ten per cent lower than 1953, and acetate showed a similar decline. However, application of rayon, particularly of high-strength rayon by the industry, have increased as new uses for it are found, Mr. Dalton said. He pointed out that although rayon and acetate are young when compared to the natural fibers, they are increasing in importance because of reliable supply.

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Cotton Producers Approve Controls

Cotton growers last month gave overwhelming approval to the Agriculture Department's rigid production control program for 1955. A majority of some 92 per cent of growers from the 20 cotton growing states favored the controls proposed by Agriculture Secretary Benson back last October. At that time, he had proposed controls that would establish acreage allotments and marketing quotas at the lowest level permitted by law. He set acreage allotments at 18,113,208 acres, a 15 per cent cutback from the 1954 allotment of 21,400,000 acres. He fixed the marketing quota at ten million bales. In doing so, he stated that actual domestic and export needs would justify production of only 9,700,000 bales in 1955, but he could not go below the "floor" provided by law.

As a result of the growers' approval, Secretary Benson must fix federal supports at from 82½ to 90 per cent of the "fair" parity price.

The Agriculture Department has announced that production and imports of cotton for the 1954-55 marketing year are estimated at about 13,700,000 bales. The estimate includes exports of about 4½ million bales for a total of 13½ million bales. This will add about 200,000 bales to the cotton surplus. The department had earlier predicted that the crop would fall short of meeting current needs.

Cotton System Spinning Activity—Nov. '54

The Bureau of the Census, Department of Commerce, has announced that, according to preliminary figures, 22,535 thousand cotton system spinning spindles were in place in the U. S. on Nov. 27, 1954. Of these, 19,348 thousand were consuming cotton, 1,434 thousand were consuming other than cotton and 7,753 thousand were reported idle.

The total cotton system spinning spindle hours reported for the November period amounted to 9,464 million, an average of 485.4 million hours per working day (based on 19½ days). During November cotton system spinning spindles operated at 134.6 per cent of capacity (based on 19½ days of 16 hours) compared with 136.3 per cent for October (based on 19¾ days of 16 hours).

Cotton Broad Woven Production—3rd Q. '54

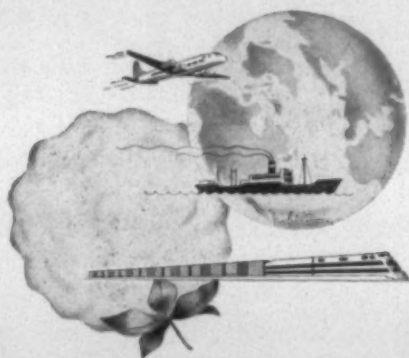
Cotton broad woven fabric production in the third quarter of 1954 was six per cent below the second quarter output, and five per cent below the third quarter 1953 level, according to the Census Bureau, Department of Commerce. Cotton duck production increased seven per cent, and towels, toweling and dishcloth fabric increased one per cent. Production of the other major fabric class declined three to 11 per cent, the bureau reports.

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WANTED—Job as dyer. Twenty years' experience on raw stock, package, beams, and all types color. Good references. Reply to Box "GF," care Textile Bulletin, P. O. Box 1225, Charlotte 1, N. C.

WANTED—Position as General Overseer of Carding, Spinning, Twisting and Winding. Experienced all phases of cotton and waste manufacturing including Tube Twists. Some Rayon experience. Capable of directing entire unit. Presently employed; sober; high school education; age 46. Address Box "KS," care Textile Bulletin, P. O. Box 1225, Charlotte 1, N. C.

POSITION WANTED —Overseer carding and/or spinning. Thoroughly experienced in top-quality production. Progressive work history. Presently employed, best of references. Reply to Box "S. C.," care Textile Bulletin, P. O. Box 1225, Charlotte 1, N. C.

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Before Closing Down

— TEXTILE INDUSTRY HAPPENINGS AS THIS ISSUE WENT TO PRESS —

PERSONAL NEWS



W. B. Etters

W. B. Etters, formerly plant manager of Laurens (S. C.) Mills, has become associated with Oconee Mills Inc., Westminster, S. C. Mr. Etters is a member of the board of governors of the Southern Textile Association.

James N. Goode, master mechanic at the Cliffside, N. C., plant of Cone Mills Corp., has retired after 52 years with the company. Mr. Goode, who is called "Mr. Jim" or "Cap'n Goode" by his friends, began his career with Cone by hauling rocks to use in the construction of the firm's power dam in 1902. His first work inside the mill was in the spinning room. In 1911 he transferred to the machine shop as a machinist and had been master mechanic there since 1934.

John H. Kemp has been transferred to the staple sales division of American Viscose Corp. In his new assignment, Mr. Kemp will co-ordinate activities in product development, particularly with respect to home furnishings markets. Mr. Kemp joined Avisco in June 1953 as a technician in the converting relations department. He was previously associated with Du Pont as a dyeing technician.



E. W. Fanning

Ernest W. Fanning has been appointed Southern sales manager for the H. F. Livermore Corp., with headquarters at Greenville, S. C. Mr. Fanning, whose principal function will be to give greater personalized service to Southern mills, has been with Livermore for some 33 years. The company maintains a distribution branch at Greenville.

Dr. Robert Gordon Carson Jr., a member of the faculty of the School of Textiles, Clemson College, has been appointed head of the industrial engineering department at North Carolina State College. Dr. Carson, who has been at Clemson since 1947, will assume his new post in February. He succeeds Prof. Carl D. Hart, who has served temporarily as the department head since the resignation last Fall of Prof. David E. Henderson.

Frederic G. Barnett and E. Monroe Hornsby have been elected vice-presidents of Fulton Bag & Cotton Mills, Atlanta, Ga. Mr. Barnett is manager of the company's Dallas (Ga.) plant and Mr. Hornsby is manager of

the New York office. Both have been directors of the company several years. . . . New directors elected by the firm include James D. Robinson Jr., chairman of the First National Bank of Atlanta; William E. Mitchell, president of Atlantic Realty Co.; Robert O. Arnold, president of Covington (Ga.) Mills and chairman of the board of regents of the University System of Georgia; and Herbert R. Elsas of the law firm of Sutherland, Ashill & Brennan, Atlanta. All other officers of the company were re-elected.



John W. Long Jr.

John W. Long Jr. has been named sales representative for Gastonia (N. C.) Roller, Flyer and Spindle Co. Mr. Long, whose late father was for 17 years superintendent of the Groves Thread Mills in Gastonia, and whose brother, T. Fred, is superintendent of Tolar, Hart & Holt Mills Inc., Fayetteville, N. C., will cover the states of Georgia, Alabama and Tennessee for the company. He was previously associated with Norlander-Young Machinery Co., Gastonia. He will make his headquarters in the state of Georgia.



Frederic W. Howe

Frederic W. Howe Jr., president and general manager of Crompton & Knowles Loom Works, Worcester, Mass., has been elected a director of the Worcester County Trust Co. Mr. Howe is also president of the Crompton & Knowles subsidiaries, Crompton & Knowles Jacquard & Supply Co., Pawtucket, R. I., Crompton & Knowles of Canada Ltd., Montreal, Que., and Althouse Chemical Co., Reading, Pa. He is also president of the American Textile Machinery Association.

Robert M. Vance, a director of Clinton and Lydia Cotton Mills, Clinton, S. C., has been elected vice-president of both mills. Mr. Vance succeeds the late George H. Cornelson, who was vice-president for a number of years until his death in December. . . . Claude Crocker, one-time personnel director of both mills, has returned to the company as director of industrial relations. Mr. Crocker was personnel director from 1950 to 1952 when he became industrial relations director of J. P. Stevens & Co. Inc., Slater, S. C.

J. L. Williams, director of industrial relations for Erwin Mills Inc., Durham, N. C., has terminated his full-time services with Erwin, although remaining on for a short

period as part-time consultant, in order that he might return to Burlington Mills Corp., Greensboro, N. C. Mr. Williams left Burlington last May to join Erwin.

Burke M. McConnell, executive vice-president of the Amerotron Corp. and a former vice-president of Burlington Mills Corp., has been named chairman of the textiles division of the National Foundation For Infantile Paralysis.

Harold W. Whitcomb, president of Fieldcrest Mills Inc., has been named "Tri-City Man of the Year" by the Leaksville-Spray (N. C.) Exchange Club. Mr. Whitcomb is also president of the community-operated Tri-City Hospital.

MILL NEWS

LINCOLNTON, N. C.—The Bell Co. Inc. has purchased some 15 acres of land north of here and has announced plans to construct a wool spinning plant. The firm, which will represent a million dollar investment and employ some 100 persons, has been incorporated under the name of Lincolnton Mills Inc., a subsidiary of Bell Co. Inc. Incorporators are Harold Myrick, Lincolnton banker; Harvey Jonas Jr., Lincolnton attorney; and John Cromer, insurance official. It is not known how soon construction will begin.

FAYETTEVILLE, N. C.—Waxhaw (N. C.) Mfg. Co. has been merged into Tolar, Hart & Holt Mills Inc., here, according to D. R. LaFar Jr. of Gastonia, N. C., president of both firms. The local plant is the surviving corporation. Waxhaw Mfg. Co. has not been in operation for some time.

DOUBLE SHOALS, N. C.—Double Shoals Mills Inc. has been leased and will be operated by Belmont Cotton Mills Co., Shelby, N. C., according to P. M. Neisler Sr., president of the latter firm. The plant has been closed down several months. According to Mr. Neisler, all present equipment will be overhauled and production will be resumed about mid-February. He did not indicate whether the mill would spin cotton or synthetics.

SHELBY, N. C.—J. R. Dover, president of Esther Mill Corp., has announced plans for the construction of a three-story addition to the plant at a cost of from \$150,000 to \$175,000. The addition will include 26,000 square feet of floor space and will provide space for 75 additional looms. Construction is expected to be completed about April 1.

DALTON, GA.—Dalton Candlewick Inc., a subsidiary of Dixie Mercerizing Co., Chattanooga, Tenn., has acquired the properties of Royston (Ga.) Mills Inc. According to C. Ralph Ewing, executive vice-president of Dixie Mercerizing and president of Dalton

BEFORE CLOSING DOWN

Candlewick, Royston will become a division of Dalton Candlewick. He said that considerable new equipment will be added at Royston and that the mill's production would be devoted primarily to the manufacture of cotton yarns. J. R. Davison, who has been manager of Royston, will continue in that capacity.

SHELBY, N. C.—Textile Workers Union of America, C.I.O., has withdrawn charges and a request for an election at Shelby Cotton Mills, according to R. T. LeGrand Jr., secretary-treasurer of the firm. "This is the second time in little more than a year that the union has asked for a vote here," he pointed out. "On the occasion of its first campaign here several years ago, it did go through with an election and was voted down by the employees."

NEW YORK, N. Y.—Final terms of the merger agreement between Naumkeag Steam Cotton Co. and Indian Head Mills Inc. have been announced by Rudolph C. Dick, president of Naumkeag, and James E. Robison, president of Indian Head. Special meetings of stockholders to vote on the merger plan have been called for Feb. 14. After the merger agreement is approved by the stockholders of both companies, all of the presently outstanding 246,055 shares of common stock of Naumkeag will be converted, share for share, into new cumulative preferred stock, upon which the annual dividend rate will be \$1.25 per share, which will have general voting rights and will be callable at, and will be entitled upon liquidation to, \$25 per share plus accrued dividends. The new preferred stock will have provisions calling for sinking fund payments on each quarterly dividend date. All of the presently outstanding 229,000 shares of common stock of Indian Head will be converted, share for share, into new common stock with a par value of \$1 per share. The merged businesses will be conducted under the name of Indian Head Mills Inc. Mr. Robison will be president of the merged company and the present officers of Indian Head will hold corresponding offices. The combined company will have total assets of over \$10,000,000 and a total sales volume of about \$20,000,000.

TURNERSBURG, N. C.—Rocky Creek Mills Inc., here, spinning unit of Henkel Mill Co., Statesville, N. C., has been leased to a Marion, N. C., textile group headed by R. W. Twitty, president of Marion Mfg. Co. According to Mr. Twitty, the plant will be enlarged and new machinery installed. No changes in personnel are contemplated, he stated, and the mill will continue to operate under the same name. The plant was built in 1951 and equipped throughout with new machinery. Originally set up for spinning cotton yarns, the plant was converted last year to spin quality nylon, rayon and blends of synthetics.

KERNSTOWN, VA.—Ashworth Bros. Inc., Fall River, Mass., card clothing manufacturer, has started construction of a new \$350,000 plant here. The new plant will be erected on a ten-acre tract and will contain 45,000 square feet of floor space. It is expected to go into operation the last of

May, employing 150 persons. Frederick Hale of Grafton, Mass., will be general manager of the plant.

ROCK HILL, S. C.—The mill division of Gold-Tex Fabric Corp., here, has completed the \$2 million modernization program it began last May and expects to resume production of quality denims soon. An air-conditioned office, a new cotton warehouse and other facilities have been added in the mod-

ernization program as well as the installation of new machinery in most departments. The firm expects to employ about 300.

HILDEBRAN, N. C.—Construction of a 2,300 square foot office building has been started at Quaker Meadows Mills Inc., here. The one-story and partial basement structure should be completed in about three months. Offices of the firm are now located in the mill building.

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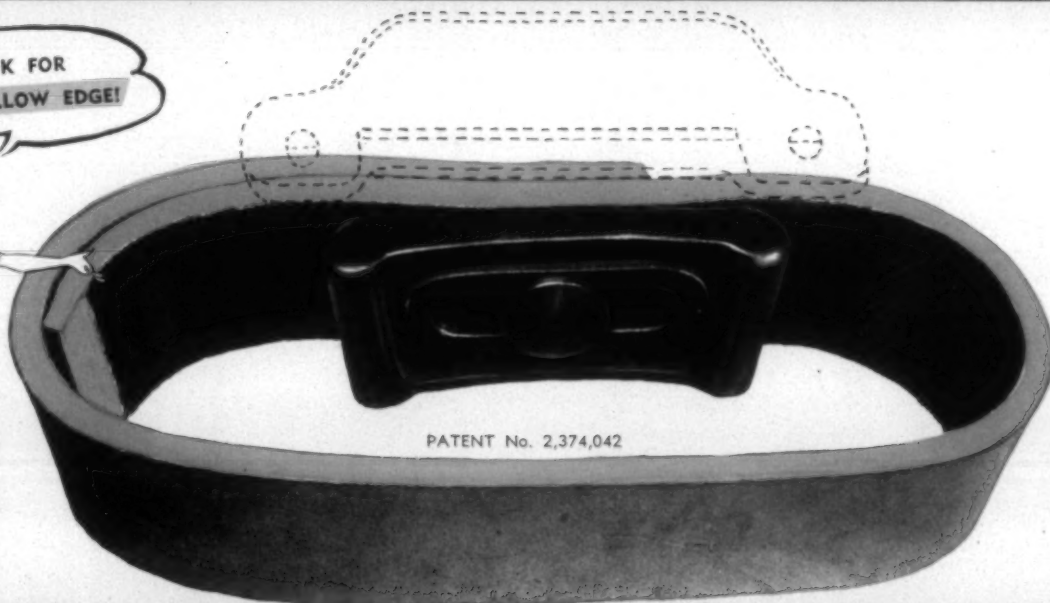
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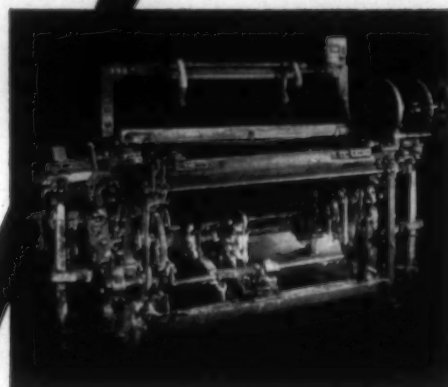
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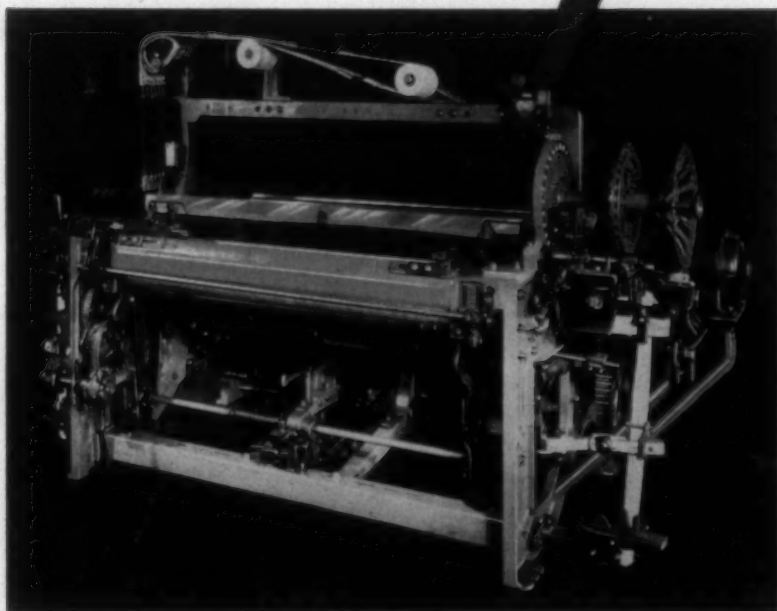
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